Index of Primary 5

1 UNIT

Decimal Place Value and Computation

2 UNIT

Number Relationships

Bloom's Taxonomy of cognitive levels

The questions within each exercise are classified according to the levels of Bloom's Pyramid.

From the school book

Selected questions from the school book.

Exercise

Miscellaneous questions on the concept or the skill of the lesson.

Multiple Choice Questions

Multiple choice questions to review the concept or the skill of the lesson to reinforce the learning of your child.

Unit's Assessment

After finishing each unit, use the assessment page.

This assessment will give you feedback about your child's level through this unit.

REVISION

In this revision your child will review on what he/she had learned in primary four.

Revision 1

1. Choose the correct answer.

a. In the number 325.41, which digit is in the Hundredths place ?

    A. 1   B. 2   C. 3   D. 4

b. $2 \times (7 \times 4) = (2 \times \underline{\quad}) \times 4$

    A. 2   B. 4   C. 5   D. 7

c. $255 \div 5 = \underline{\quad}$

    A. 11   B. 50   C. 51   D. 55

d. $4.6 = \underline{\quad}$ tenths.

    A. 0.46   B. 46   C. 460   D. 4,600

e. Round $387,932 = \underline{\quad}$ (to the nearest Hundred).

    A. 387,900   B. 388,000   C. 387,930   D. 390,000

f. The GCF of 48 and 56 is $\underline{\quad}$

    A. 6   B. 8   C. 9   D. 12

2. Complete the following.

a. $\underline{\quad}$ is a common multiple of 4 and 5 , and lies between 10 and 30.

b. $800 \times 3 = \underline{\quad}$ **c.** $64,731 + 59,189 = \underline{\quad}$

d. The difference between 214 and 189 is $\underline{\quad}$

e. Skip count by 8 (8 , $\underline{\quad}$, 24 , $\underline{\quad}$, $\underline{\quad}$, 48 , $\underline{\quad}$)

f. In the bar model

100	
35	x

, the equation which you can form for it is $\underline{\quad}$

3. Put (< , > or =).

a. 0.45 $\bigcirc$ 0.5   **b.** 9,000 thousands $\bigcirc$ 9 millions

c. 82,063 – 14,589 $\bigcirc$ 35,896 + 31,568   **d.** 187×4 $\bigcirc$ $700 + 40 + 8$

4. Find the result.

a.
$$\begin{array}{r} 5,470 \\ +\ 2,386 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 2\,7 \\ \times\ \ \ 4 \\ \hline \end{array}$$

c.
$$3\overline{)735}$$

5. Bassem reads books in a series of mysteries. Each book has 128 pages. How many pages will Bassem read if he finishes 9 of these books ?

Revision 2

1. Complete the following.

   a. The smallest prime number is ———

   b. $7 + 0.1 + 0.05 =$ ———

   c. If $m + 25 = 31$, then $m =$ ———

   d. If $975 \div 3 = 325$, then the dividend is ———

   e. $354 + [116 + 243] = [354 +$ ——— $] + 243$

   f. The value of the digit 4 in the number 3.74 is ———

2. Choose the correct answer.

   a. $\frac{3}{10}$ is equivalent to ———

     A. 30   **B.** 0.30   **C.** 0.03   **D.** 0.003

   b. 754,321 $\bigcirc$ 98,564

     A. <   **B.** =   **C.** >

   c. $180 \div 2 =$ ———

     A. 240   **B.** 900   **C.** 9   **D.** 90

   d. $0.08 =$ ———

     A. 0.8   **B.** $\frac{8}{10}$ **C.** $\frac{8}{100}$ **D.** 800

   e. The place value of the digit 8 in the number 356.81 is———

     A. 8   **B.** Ones   **C.** 0.8   **D.** Tenths

   f. $17,856 \approx$ ——— (to the nearest Thousand).

     A. 17,900   **B.** 20,000   **C.** 18,000   **D.** 17,860

3. Write in word form.

   a. 14.3 ———

   b. 6 Ones, 8 Hundredths ———

4. Find the result.

   a. $5,761 + 12,888 =$ ———   **b.** $40 \times 30 =$ ———

   c. $6,060 - 3,488 =$ ———   **d.** $1,278 \div 6 =$ ———

5. A train has 896 seats for passengers, if there are 8 carriages on the train and each carriage has the same number of seats, how many passengers can sit in each carriage?

11

Revision 3

1. **Complete.**
   a. If $a - 13 = 7$, then $a =$ ———
   b. $7 \times 243 = (7 \times 200) + (7 \times$ ——— $) + (7 \times 3)$
   c. 32 tenths = ——— (decimal form)
   d. $28,702 \approx$ ——— (to the nearest Ten Thousand)
   e. 3 kg = ——— g
   f. 15,000 mL = ——— L

2. **Choose the correct answer.**
   a. Which number is the greatest ?
   A. 549,300　　B. 4,004,030　　C. 5,490,003　　D. 5,490,030
   b. ——— is a multiple of 8.
   A. 4　　B. 16　　C. 18　　D. 20
   c. Which of the following is the least number possible formed from the digits : 2 , 7 , 0 , 8 , 4 ?
   A. 2,487　　B. 20,847　　C. 20,478　　D. 87,420
   d. The product of 62×9 is ———
   A. 1,148　　B. 114　　C. 152　　D. 558
   e. The number 18 has ——— factors.
   A. 3　　B. 4　　C. 6　　D. 8
   f. Which number is a factor of 14 ?
   A. 3　　B. 4　　C. 6　　D. 7

3. **Arrange the following numbers in an ascending order.**
   6,785,000 , 5,700,726 , 7,456,232 , 6,670,785 , 5,700,624

4. **Put (< , > or =).**
   a. $5,674 + 2,326$ ◯ $12,562 - 4,562$　　b. 6×40 ◯ 70×3
   c. $138 \div 6$ ◯ 25
   d. The common multiple of all numbers ◯ the common factor of all numbers.

5. Find all the factors of each of 30 and 36, then find the greatest common factor of them.

12

Revision 4

1. Choose the correct answer.

   a. The missing value in the area model representing 29×6 is ——————

	20	9
6	120	?

      A. 90   **B.** 54

      C. 12   **D.** 180

   b. In the bar model

37	
y	17

 , $y =$ ——————

      A. 2   **B.** 54   **C.** 20   **D.** 30

   c. $3 \times 48 = 100 +$ ——————

      A. 44   **B.** 144   **C.** 56   **D.** 244

   d. —————— is a prime number.

      A. 1   **B.** 8   **C.** 9   **D.** 11

   e. $100 \times$ —————— $= 1,400$

      A. 1,300   **B.** 14   **C.** 140   **D.** 1,400

   f. —————— is a multiple of 5

      A. 24   **B.** 30   **C.** 18   **D.** 6

2. Find.

   a. $35,896 + 31,568$ **b.** $81,063 - 14,519$

   c. $240 \div 2$ **d.** 136×5

3. Complete the following.

   a. The sum of $12,985$, $36,524$ and $10,246$ is ——————

   b. $7 \text{ km} =$ —————— m   **c.** 16 is 8 times the number ——————

   d. 40 Thousands = —————— Hundreds   **e.** $9,000 \text{ mL} =$ —————— L

   f. $29 \times 0 =$ ——————

4. Write each of the following numbers in standard form.

   a. Seven and fifteen hundredths ——————————————————————

   b. $50 + 7 + 0.04$ ——————————————————————

   c. 9 Ones , 3 Tenths , 6 Hundredths ——————————————————

5. Ahmed's school has 9 classrooms. If each class donates 50 cans of food to charity. How many cans will be donated ? ——————————————————————

13

UNIT 1

Decimal Place Value and Computation

▸ **Concept 1 :**
Decimals to the Thousandths Place

▸ **Concept 2 :**
Adding and Subtracting Decimals

Fast Fact

Each goal in a football game consists of two upright posts and joined at the top by a horizontal crossbar. The distance between the posts is 7.32 m and the distance from the lower edge of the crossbar to the ground is 2.44 m.
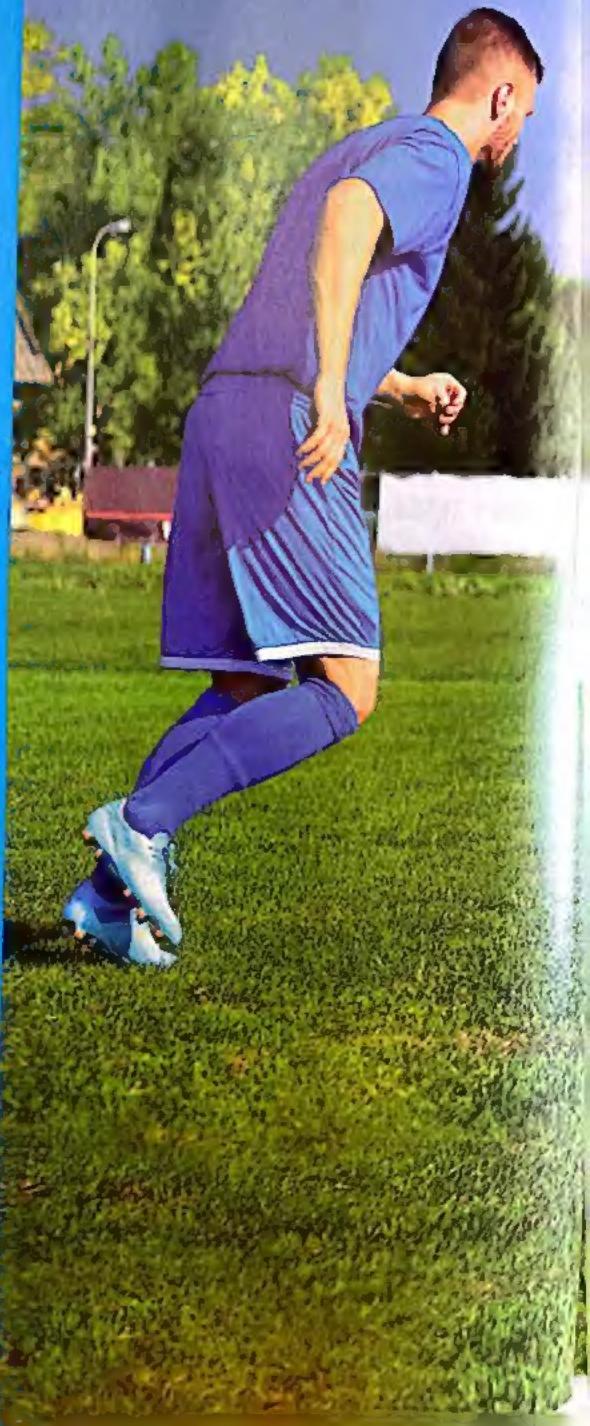
Concept 1

Decimals to the Thousandths Place

Lesson No.	Lesson Name	Learning Objectives
Lesson 1	Decimals to the Thousandths Place	• Students will read decimal numbers to the Thousandths place. • Students will write decimal numbers to the Thousandths place.
Lessons 2&3	Place Value Shuffle	• Students will explain how a digit changes value as it moves to the left or right in a decimal or whole number.
	Composing and Decomposing Decimals	• Students will compose and decompose decimals in multiple ways.
Lesson 4	Comparing Decimals	• Students will compare decimals to the Thousandths place.
Lesson 5	Rounding Decimals	• Students will round numbers to the nearest Tenth, Hundredth, or Thousandth.

▶ Decimals to the Thousandths Place

Learn Decimals to the Thousandths place

- A decimal is a number that uses a decimal point as **9.58**
- A decimal has one or more digits to the right of a decimal point.

- You can use the following grid to illustrate the meaning of thousandth.

One whole is divided into

10 equal parts
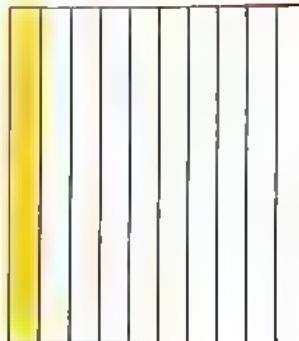
The shaded part
= 1 tenth
= $\frac{1}{10}$ (0.1)

or

100 equal parts
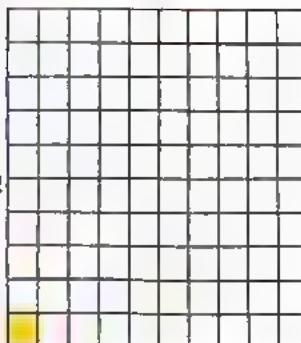
The shaded part
= 1 hundredth
= $\frac{1}{100}$ (0.01)

Notes for parents :
- Let your child review place value from the Milliards place to the Hundredth place.

or

1,000 equal parts
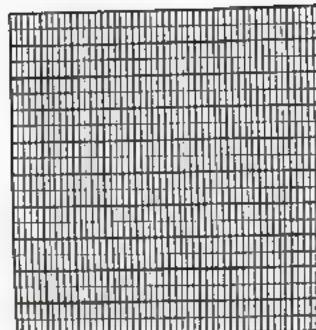
The shaded part = 1 thousandth
$= \frac{1}{1,000}$ (0.001)

Note that
- Each tenth could be divided into 100 equal parts, each part represents one thousandth
- Each hundredth could be divided into 10 equal parts, each part represents one thousandth.

• The value of each digit in any number depends on its place in this number

For Example :

Notice the value of each digit in the number 3,249.578

3 is in the Thousands place.	2 is in the Hundreds place.	4 is in the Tens place.	9 is in the Ones place.	This is the decimal point.	5 is in the Tenths place.	7 is in the Hundredths place.	8 is in the Thousandths place.
3	**2**	**4**	**9**	⦁	**5**	**7**	**8**
Its value is 3,000	Its value is 200	Its value is 40	Its value is 9		Its value is 0.5 $(=\frac{5}{10})$	Its value is 0.07 $(=\frac{7}{100})$	Its value is 0.008 $(=\frac{8}{1000})$
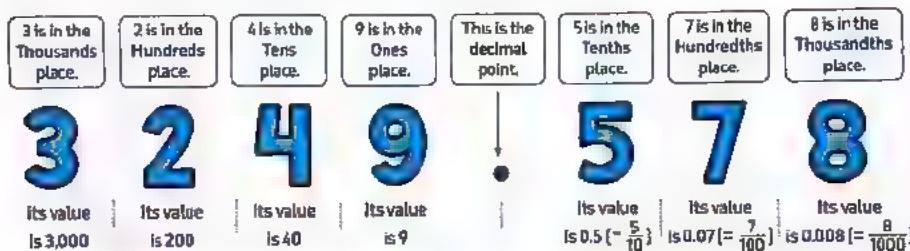
You can use the large place-value chart to help you read and write decimals as follows :

Milliards	Millions			Thousands			Ones				Decimals		
O	H	T	O	H	T	O	H	T	O	·	Tenths	Hundredths	Thousandths
							3	2	4	9 ·	5	7	8

Standard Form : 3,249.578

Word Form : Three thousand , two hundred forty-nine and five hundred seventy – eight thousandths.

Unit Form : 3 Thousands , 2 Hundreds , 4 Tens , 9 Ones , 5 Tenths , 7 Hundredths , 8 Thousandths.

• Help your child read numbers from the Milliards place to the Thousandths place.

17

Example 1

Write each of the following numbers in the place-value chart.

a. Two hundred forty-three and fifty-seven thousandths.

b. Sixty-seven thousand , three hundred four and eight hundredths.

c. Four milliard , five hundred thousand and six thousandths.

Solution

	Milliards	Million			Thousands			Ones			.	Tenths	Hundredths	Thousandths
	O	H	T	O	H	T	O	H	T	O	.	Tenths	Hundredths	Thousandths
a.								2	4	3	.	0	5	7
b.						6	7	3	0	4	.	0	8	
c.	4	0	0	0	5	0	0	0	0	0	.	0	0	6

Example 2

Write each of the following in word form.

a. 305.183

b. 84.005

c. 3,024.8

d. 12,002,340.14

e. 1,000,000,020.086

f. 700,200,100.4

Solution

a. Three hundred five and one hundred eighty-three thousandths.

b. Eighty-four and five thousandths.

c. Three thousand, twenty-four and eight tenths.

d. Twelve million, two thousand, three hundred forty and fourteen hundredths.

e. One milliard, twenty and eighty-six thousandths.

f. Seven hundred million, two hundred thousand, one hundred and four tenths.

Example 3

In the number 6,354.792

a. What is the value of 6 ?

b. What is the value of 2 ?

c. What does the digit 4 represent ?

d. What is the value of the digit in the Hundredth place ?

Solution

a. 6,000

b. 0.002

c. 4 ones

d. 0.09

Notes for parents :

• Help your child read and write decimal numbers to the Thousandths place.

18

Example 4

Record what decimal is shown :

a.
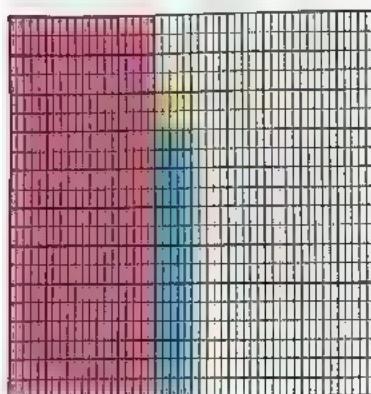
The shaded part = 4 Tenths , 7 Hundredths , 6 Thousandths

= 476 thousandths

$= 0.476 \left(\frac{476}{1,000}\right)$

"Four hundred seventy-six thousandths"

b.
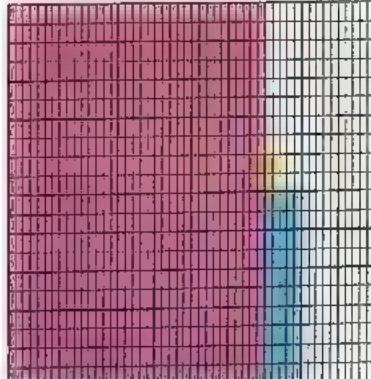
The shaded part – 7 Tenths , 5 Hundredths , 4 Thousandths

= 754 thousandths

$= 0.754 \left(\frac{754}{1,000}\right)$

"Seven hundred fifty-four thousandths"

c.
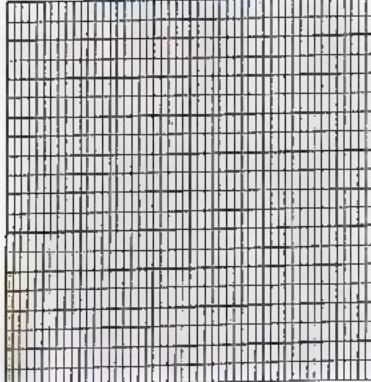
The shaded part = 6 Thousandths

$= 0.006 \left(\frac{6}{1,000}\right)$

"Six thousandths"

• Ask your child to give you more examples on decimals to the Thousandths place.

19

Lesson 1

You can name the same amount in different ways as follows :
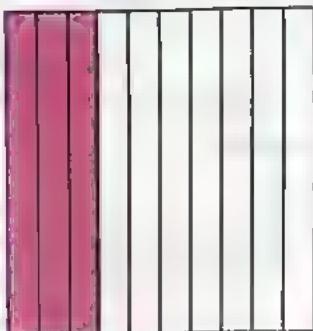
$$\frac{3}{10} \quad = \quad \frac{30}{100} \quad = \quad \frac{300}{1,000}$$
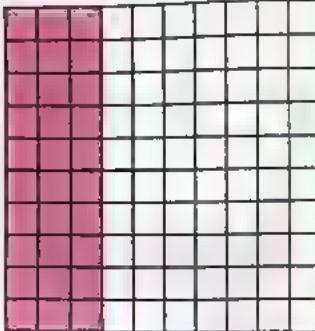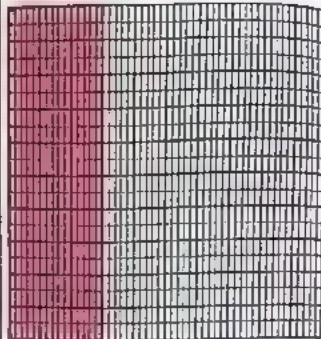
$$0.3 \quad = \quad 0.30 \quad = \quad 0.300$$

We deduce that :

If you put zeroes after the last decimal digit in a number , then the value of this number doesn't change.

✓ Check your understanding

1. Complete.

   a. In 942.358 , the digit 8 is in the ———— place. Its value is ——

   b. In 791.06 , the digit 0 is in the ———— place. Its value is ——

   c. In 302.91 , the digit 1 is in the ———— place. Its value is

2. Record what decimal is shown :

a.

b.
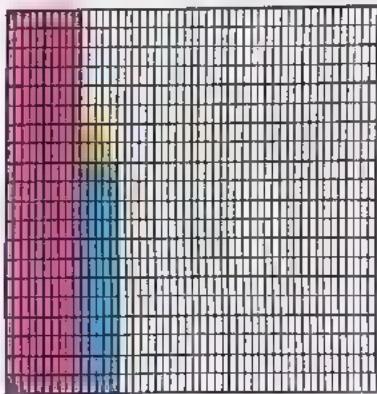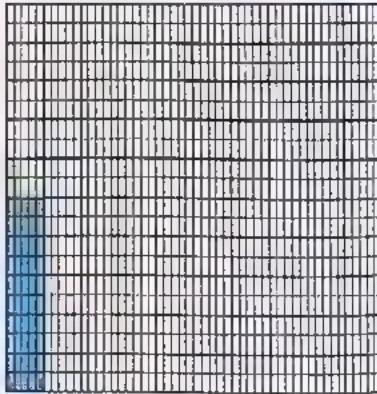
Notes for parents :

• Give your child a decimal like 0.8 and ask him/her to name this decimal in different ways.

● REMEMBER   ⬛ UNDERSTAND   ○ APPLY   ⚬ PROBLEM SOLVING   ⌐ From the school book

1. **Write each of the following numbers in the place-value chart.**

   a. Three hundred fifty-two and seventy-four hundredths.

   b. Six hundred forty-two thousand, five hundred one and fifty-one hundredths.

   c. Nine thousand, eight hundred eighty and twenty-seven thousandths.

   d. Seven milliard, nine hundred million, two hundred four thousand, sixty and eight tenths.

   e. Two hundred sixty-five million, nine hundred forty thousand, thirteen and ninety-one hundredths.

   f. Four million, five thousand and three thousandths.

Milliards	Millions			Thousands			Ones			.	Decimals		
O	H	T	O	H	T	O	H	T	O	.	Tenths	Hundredths	Thousandths
a.										,			
b.										,			
c.										,			
d.										,			
e.										,			
f.										,			

2. **Write each of the following in decimal form.**

   a. 24 hundredths ——

   b. 35 thousandths ——

   c. 8 thousandths —

   d. 7 and 14 thousandths ——

   e. 4 and 4 thousandths

   f. 1 and 5 tenths ——

   g. 9 and 700 thousandths ——

   h. 20 and 40 thousandths ——

   i. 7 thousand and 48 hundredths ——

   j. 3 million and 142 thousandths —

   k. 2 milliard and 3 thousandths ——

   l. 4 tenths, 8 thousandths ——

   m. 5 ones, 2 thousandths ——

   n. 3 million, 2 hundred, 3 hundredths, 5 thousandths ——

   o. Three and twenty-five thousandths ——

[El Beheira 23]

21

p. Two and one hundred nine thousandths ———

q. Three hundred forty and seventy-two thousandths ═══—

r. Two million, thirty-two thousand and sixty-one hundredths ═══—

s. Three milliard, seventeen and forty-eight hundredths ———

t. Five hundred twenty-seven million, seven hundred thousand, five hundred thirty and eighty-four hundredths ——

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3. Write each of the following in word form.

a. 504.21 ———

b. 4.231———

c. 49.08 ———

d. 0.534 ———

e. 4,030.7———

f. 4.029 ———

g. 17.107———

h. 1.802———

i. 0.608 ———

j. 8.002 ———

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4. Complete.

a. The value of the digit 6 in the number 2.612 is ———   (Giza – Abo El Nomrous 2)

b. In 1,354.982 , the digit 2 is in the ——— place. Its value is ———

c. In 46.71 , the digit 7 is in the ——— place. Its value is ———

d. In 734.28 , the digit 8 is in the ——— place. Its value is ———

e. In 452.09 , the digit 5 is in the ——— place. Its value is ———

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5. In the number 729.458

a. What is the value of 4 ? ———

b. What is the value of 8 ? ———

c. What does the digit 2 represent ? ———

d. What does the digit 9 represent ? ———

e. What is the value of the digit in the Hundredths place ? ———

6. Record what decimal is shown.

a.

_____
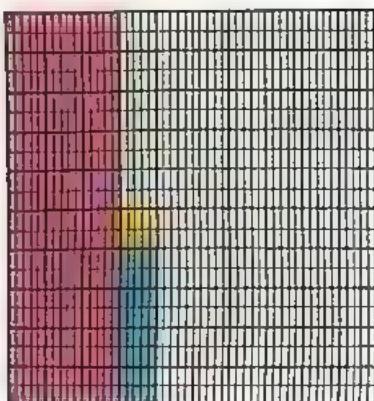
b.

_____
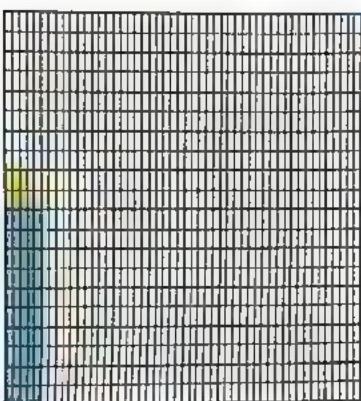
c.

_____
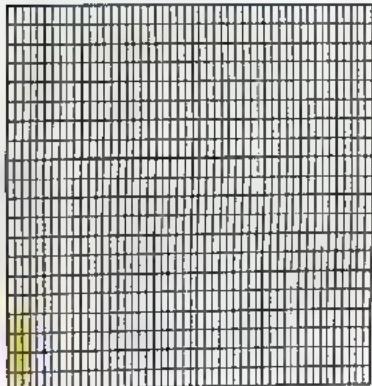
d.

_____
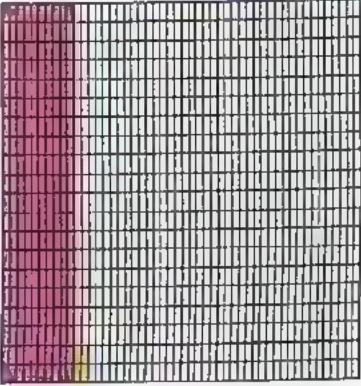
7. Shade in the grids to show the decimal stated.

a. 0.432

b. 0.506

23
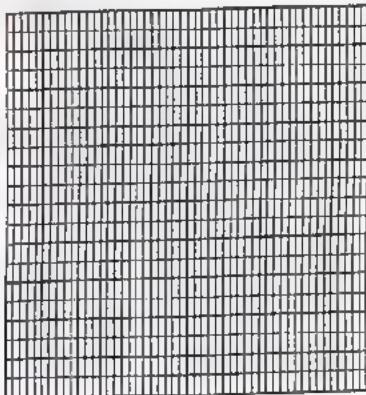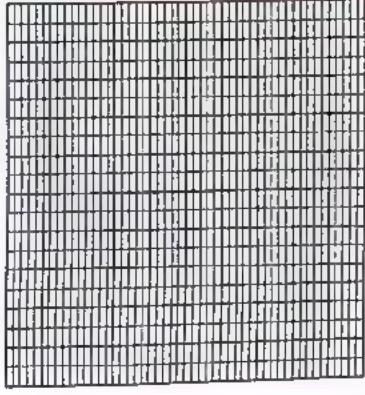
c. 0.004
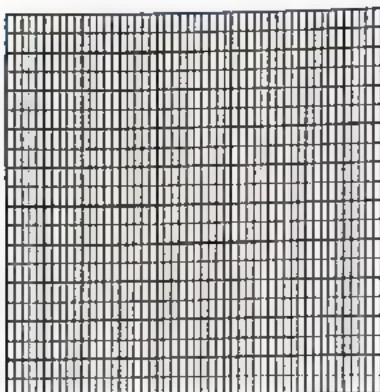
d. 0.048

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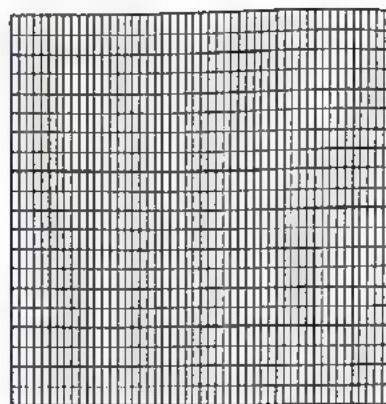
8. How many whole numbers, tenths, hundredths and thousandths does the number 0.007 have ?

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9. 📖 The Purple Heron is tall at 70 to 90 centimeters, but it weighs only 0.50 to 1.35
♣ kilograms. Below are the weights of three Purple Herons.
For each number, record the following :
a. The digit that is in the Tenths place.
b. The digit that is in the Ones place.
c. The digit that is in the Hundredths place.

Bird One	0.65 kilogram
Bird Two	1.27 kilograms
Bird Three	0.875 kilogram

10. 📖 Math around Egypt : Gas Price Decimals
♣ Look at the list of different petrol prices in Egypt.
a. Which type of petrol is the least expensive ?
b. Which type of petrol is the most expensive ?

Gas Prices per Liter, April 2021
80 Octane petrol : 6.75 L.E.
92 Octane petrol : 8.00 L.E.
95 Octane petrol : 9.00 L.E.

24

Multiple Choice Questions

Choose the correct answer.

1. $\frac{357}{1,000} =$ _____ [El Beheira 23]

- A. 3.75
- B. 0.357
- C. 357
- D. 3.57

2. Three and seventy-five hundredths
= _____ [El Beheira - Housh Essa 23]

- A. 3.57
- B. 3.75
- C. 375
- D. 35.7

3. The number "four and one hundred forty-one thousandths" in standard form is

- A. 4.414
- B. 4.141
- C. 410.4
- D. 4.401

4. Three and fifty-nine thousandths is ____ [El Monofia - Shibean El Kom 23]

- A. 3.950
- B. 3.59
- C. 3.059
- D. 0.359

5. Which number of the following has 3 hundredths, 7 ones, 2 thousandths?

- A. 0.732
- B. 3.72
- C. 7.032
- D. 3.702

6. The value of the digit 4 in the number 515.4 is _____ [El Menia - Deir Mawas 23]

- A. 40,000
- B. 4
- C. 0.4
- D. 0.004

7. The value of the digit 4 in the number 3.514 is _____ [Giza - Awseem 23]

- A. 40,000
- B. 400
- C. 0.4
- D. 0.004

8. The underlined digit in 27.614 is in the ____ place.

- A. Tenths
- B. Hundredths
- C. Thousandths
- D. Ones

9. The place value of the digit 3 in the number 15.32 is _____ [Aswan 23]

- A. Ones
- B. Hundreds
- C. Tenths
- D. Thousandths

10. Which of the following doesn't equal four hundred thousandths?

- A. 0.004
- B. 0.40
- C. 0.4
- D. 0.400

11. The decimal fraction 0.053 reads _____
[Cairo - Al Khalifa and Al Mokattam 23]

- A. fifty-three hundredths
- B. fifty-three hundreds
- C. thirty-five hundredths
- D. fifty-three thousandths

12. 0.300 = _____

- A. 30 Tenths
- B. Three hundred
- C. Three tenths
- D. Thirty thousandths

25

▶ Place Value Shuffle

▶ Composing and Decomposing Decimals

Learn ① Place value shuffle

1 If a whole number or a decimal is multiplied by (10)
,then each digit from this number moves to left one spot on the
place-value chart and the value of each digit increases ten times.

For Example.   **714 × 10**

Millions			Thousands			Ones			.	Tenths	Hundredths
H	T	O	H	T	O	H	T	O	.		
						7	1	4	.	0	0
					7	1	4	0	.	0	0

- Record 714 on the place-value chart.
- Shift each digit to the left one spot to get the number "7,140"
- Then 714 × 10 = 7,140
- The value of the whole number "714" increased when multiplying by 10
- The value of 7 increased when multiplying by 10 from 700 to 7,000
- The value of 1 increased when multiplying by 10 from 10 to 100
- The value of 4 increased when multiplying by 10 from 4 to 40

Another Example :   **714 × 100**

Millions			Thousands			Ones			.	Tenths	Hundredths
H	T	O	H	T	O	H	T	O	.		
						7	1	4	.	0	0
					7	1	4	0	.	0	0
				7	1	4	0	0	.	0	0

Note that

When multiplying by (100) each digit shifts to the left two spots, then
the value of each digit increases 100 times.

- Then 714 × 100 = 71,400

Notes for parents :

- Let your child explain how a digit changes value as it moves to left in a decimal or
  a whole number.

2 If a whole number or a decimal is divided by [10]
, then each digit from this number moves to right one spot on the
place-value chart and the value of each digit decreases ten times.

For Example : | 615 ÷ 10 |

Millions			Thousands			Ones				Decimals	
H	T	O	H	T	O	H	T	O		Tenths	Hundredths
						6	1	5			
							6	1	.	5	

- Record 615 on the place-value chart.
- Shift each digit to the right one spot to get the number 61.5
- Then 615 ÷ 10 = 61.5
- The value of the whole number "615" decreased when dividing by 10
- The value of 6 decreased when dividing by 10 from 600 to 60
- The value of 1 decreased when dividing by 10 from 10 to 1
- The value of 5 decreased when dividing by 10 from 5 to 0.5

Another Example : | 615 ÷ 100 |

Millions			Thousands			Ones				Decimals	
H	T	O	H	T	O	H	T	O	.	Tenths	Hundredths
						6	1	5	.		
							6	1		5	
								6	.	1	5

Note that
When dividing by [100] each digit shifts to the right two spots, then the value of each
digit decreases 100 times.

- Then 615 ÷ 100 = 6.15

Remark

Dividing any number by 10 is the same as multiplying this number by $\frac{1}{10}$

So, $362 ÷ 10 = 362 × \frac{1}{10}$

- Let your child explain how a digit changes value as it moves to the right in a decimal or a whole number

27

Example 1

Use the place-value charts to solve each problem.

a. 8.7×10

b. $1.35 \times 1,000$

c. $2.5 \div 10$

d. $6.2 \div 100$

Solution

a.

Thousands			Ones			·	Decimals		
H	T	O	H	T	O	·	Tenths	Hundredths	Thousandths
					8		7		
				8	7	·	0		

$8.7 \times 10 = 87$

b.

Thousands			Ones			·	Decimals		
H	T	O	H	T	O	·	Tenths	Hundredths	Thousandths
					1		3	5	
				1	3	·	5	0	
			1	3	5		0	0	
		1	3	5	0	·	0	0	

$1.35 \times 1,000 = 1,350$

c.

Thousands			Ones			·	Decimals		
H	T	O	H	T	O	·	Tenths	Hundredths	Thousandths
					2	·	5		
					0	·	2	5	

$2.5 \div 10 = 0.25$

d.

Thousands			Ones			·	Decimals		
H	T	O	H	T	O	·	Tenths	Hundredths	Thousandths
					6		2		
						·	6	2	
					0	·	0	6	2

$6.2 \div 100 = 0.062$

Notes for parents :

- Help your child solve more problems on multiplying and dividing by 10 or 100.

28

✓ check your understanding

Use the place-value charts to solve each problem. Fill in the blanks to show how the value of each digit also changed.

a. 85 × 10

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
				.		
		—		.		

- The value of the whole number _____ (increased / decreased)
- The value of 5 (increased / decreased) when multiplying by 10 from _____ to _____
- The value of 8 (increased / decreased) when multiplying by 10 from _____ to _____

b. 942 ÷ 100

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
				.	—	—
				.	—	

- The value of the whole number _____ (increased / decreased)
- The value of 9 (increased / decreased) when dividing by 100 from _____ to _____
- The value of 2 (increased / decreased) when dividing by 100 from _____ to _____

c. 6.31 × 100

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
		—		.	—	
		—		.	—	—

- The value of the whole number _____ (increased / decreased)
- The value of 3 (increased / decreased) when multiplying by 100 from _____ to _____
- The value of 1 (increased / decreased) when multiplying by 100 from _____ to _____

d. 74.8 ÷ 10

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
			—	.		—
		—	—	.	—	—

- The value of the whole number _____ (increased / decreased)
- The value of 7 (increased / decreased) when dividing by 10 from _____ to _____
- The value of 8 (increased / decreased) when dividing by 10 from _____ to _____

• Let your child discover how the decimal point moves when multiplying and dividing by 10 or 100

29

Learn ② Composing and decomposing decimals

- **Composing** decimals means [put together]
- **Decomposing** decimals means [broken apart]
- You can decompose 843.572 in different ways using place-value chart :

Thousands	Ones				Decimals		
O	H	T	O	.	Tenths	Hundredths	Thousandths
	8	4	3	.	5	7	2

▶ **1st** way [expanded form] :

843.572 = 800 + 40 + 3 + 0.5 + 0.07 + 0.002

▶ **2nd** way :

843.572 = 843 + 0.572

> There are many answers that equal 843.572 when composed.

▶ **3rd** way :

843.572 = 843 + 0.5 + 0.07 + 0.002

Example 2

Record the number 504.82 in the place-value chart and decompose this number in expanded form then decompose it in two other ways.

Thousands	Ones				Decimals		
O	H	T	O		Tenths	Hundredths	Thousandths
	—	—			—		

- **1st** way [expanded form] : _____
- **2nd** way : _____
- **3rd** way : _____

Solution [V]

Thousands	Ones				Decimals		
O	H	T	O	.	Tenths	Hundredths	Thousandths
	5	0	4	.	8	2	

- **1st** way [expanded form]: 504.82 = 500 + 4 + 0.8 + 0.02
- **2nd** way : 504.82 = 500 + 4 + 0.82
- **3rd** way : 504.82 = 504 + 0.8 + 0.02

> You can choose any other answers.

Notes for parents :
- Let your child begin by reviewing how to write number in expanded form and learn that number can be decomposed in many different ways.

30

Example **3**

Decompose the following numerals using expanded form.

a. 640.078

b. Twenty-three and forty-two thousandths.

Solution 💡

a. $640.078 = 600 + 40 + 0.07 + 0.008$

b. $23.042 = 20 + 3 + 0.04 + 0.002$

Example **4**

Compose each of the following.

a. $4,000 + 80 + 7 + \frac{1}{10} + 0.002$

b. $420 + 0.2 + 0.07 + 0.009$

c. $5,900 + 0.3 + \frac{8}{1,000} + 70 + 2$

Solution 💡

a. 4,087.102   b. 420.279   c. 5,972.308

✅ Check your understanding

Complete the following.

1. Compose : 452.087

   Decompose : _____

2. Compose : 204.005

   Decompose : _____

3. Compose : _____

   Decompose : $540 + 0.2 + 3 + 0.007 + \frac{9}{100}$

• Help your child compose and decompose decimals in multiple ways.

1. Use the place-value charts to solve each problem. Fill in the blanks to show how the value of each digit also changed.

a. $85 \times 10 =$ ———

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
				.		
				.		

- The value of the whole number _____ (increased/decreased) when multiplying by 10
- The value of the ——— (first digit) _____ (increased/decreased) when multiplying by 10 from ——— to _____
- The value of the ——— (second digit) _____ (increased/decreased) when multiplying by 10 from ——— to ———

b. 📖 $57 \div 10 =$ ———

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
				.		
				.		

- The value of the whole number ——— (increased/decreased) when dividing by 10
- The value of the ——— (first digit) ——— (increased/decreased) when dividing by 10 from ——— to ———
- The value of the ——— (second digit) ——— (increased/decreased) when dividing by 10 from ——— to ———

32

c. 📖 6.5 × 10 = _____

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
				.		
				.		

- The value of the whole number _____ (increased/decreased) when multiplying by 10
- The value of the _____ (first digit) _____ (increased/decreased) when multiplying by 10 from _____ to _____
- The value of the _____ (second digit) _____ (increased/decreased) when multiplying by 10 from _____ to _____

d. 7.3 × 100 = _____

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
				.		
				.		

- The value of the whole number _____ (increased/decreased) when multiplying by 100
- The value of the _____ (first digit) _____ (increased/decreased) when multiplying by 100 from _____ to _____
- The value of the _____ (second digit) _____ (increased/decreased) when multiplying by 100 from _____ to _____

e. 📖 345 ÷ 10 = _____

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths
				.		
				.		

- The value of the whole number _____ (increased/decreased) when dividing by 10
- The value of the _____ (first digit) _____ (increased/decreased) when dividing by 10 from _____ to _____
- The value of the _____ (second digit) _____ (increased/decreased) when dividing by 10 from _____ to _____
- The value of the _____ (third digit) _____ (increased/decreased) when dividing by 10 from _____ to _____ .

33

2. Form the place-value chart to solve each problem.

a. $2.5 \times 10 =$ ———

b. $14.52 \times 10 =$

c. $75 \times 10 =$ ———

d. $1.452 \times 10 = -$

e. $43 \times 100 =$ ———

f. $45.6 \times 100 =$ ——— [Cairo - El Zaiton 23]

g. $4.9 \div 10 =$ ———

h. $218 \div 10 =$

i. $507.6 \div 10 =$ ———

j. $5.7 \div 100 =$——— [Monofia - Tala 23

3. In the following problem, record the number in the place-value chart and decompose this number in expanded form and then in two other ways.

a. 34.527

Thousands	Ones			.	Decimals		
O	H	T	O	.	Tenths	Hundredths	Thousandths
				.			

- 1st way [expanded form] : ————
- 2nd way : ————
- 3rd way : ————

b. 21.045

Thousands	Ones			.	Decimals		
O	H	T	O	.	Tenths	Hundredths	Thousandths
				.			

- 1st way [expanded form] : ————
- 2nd way : ————
- 3rd way : ————

c. 302.504

Thousands	Ones			.	Decimals		
O	H	T	O	.	Tenths	Hundredths	Thousandths
				.			

- 1st way [expanded form] : ————
- 2nd way : ————
- 3rd way : ————

34

d. 📖 231.128

Thousands	Ones			.	Decimals		
O	H	T	O	.	Tenths	Hundredths	Thousandths

- 1st way (expanded form) : ———————————————————
- 2nd way : ———————————————————
- 3rd way : ———————————————————

———————————————————————————————————

e. 📖 508.17

Thousands	Ones			.	Decimals		
O	H	T	O		Tenths	Hundredths	Thousandths

- 1st way (expanded form) : ———————————————————
- 2nd way : ———————————————————
- 3rd way : ———————————————————

———————————————————————————————————

4. **Write each of the following in standard form.**

a. $7 + 0.3 + 0.04 + 0.009 =$ ————————————

b. $10 + 3 + 0.2 + 0.06 =$ ———————————— (Alexandria - First Montaza 23)

c. $10 + 8 + 0.3 + 0.009 =$ ———————————— (Monofia - Shiben El Kom 23)

d. $8 + 0.2 + \frac{6}{100} + 0.009 =$ ———————————— (Cairo 23)

e. $2 + 0.9 + \frac{8}{100} + \frac{2}{1,000} =$ ———————————— (El Menia - Deir Mowas 23)

f. $5,000 + 40 + 9 + 0.2 + 0.007 =$ ————————————

g. $700 + 0.4 + 0.009 =$ ————————————

h. $0.2 + 0.009 + 10 + 400 =$ ————————————

i. $40 + 0.8 + 0.009 + 500 =$ ————————————

j. $0.003 + 0.2 + 0.01 + 91,000 =$ ———————————— (Cairo - El Sherouk 23)

k. $6,000 + 70,000 + 0.2 + 4 + 0.09 + 0.005 =$ ————————————

l. $70 + 8,000 + 0.009 + 0.1 + 3 =$ ————————————

35

5. Write the number in expanded form.

a. Two and forty-one thousandths =

b. Fourteen and three hundred two thousandths = ———

c. Seventy-nine thousandths = ———

d. 8 tens , 4 ones , 3 tenths , 6 hundredths , 9 thousandths = ———

e. 4 hundreds , 7 hundredths , 8 thousandths = ———

f. Three million , seventeen and eighty-one thousandths = ———

g. 156,327.194 = ———

[Aswan 2]

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6. Complete each of the following.

a. $4.208 =$ ——— $+ 0.2 + 0.008$

b. $70.106 = 70 + 0.1 +$ ———

c. ——— $= 120 + 0.204$

d. ——— $= 4 + 0.005 + 0.t3$

e. $34.012 = 34 +$ ———

f. ——— $= 4 + 30 + 400 + 0.008 + 0.02$

g. Seventy and eight thousandths = ——— $+$

h. Sixteen and seven tenths = ——— $+$ ——— $+$ ———

i. 283 thousandths = ——— $+ 0.2 + 0.08$

j. 57 thousandths = $0.007 +$ ———

k. 15.7 tenths = $1 +$ ——— $+ 0.07$

l. 1,482 hundredths = $14 +$ ———

Choose the correct answer.

1. $4 + 0.5 + 0.03 =$ _____

[Aswan - Kom Ombo 23]

A. 4.53   B. 5.34

C. 4.35   D. 3.54

2. 6 ones + 5 tenths + 7 thousandths = _____

[Aswan 23]

A. 0.756   B. 6.507

C. 657   D. 6,507

3. _____ $= 90 + 6 + 0.07$

[Cairo - El Marg 23]

A. 96.7   B. 96.07

C. 9.67   D. 9.067

4. $489.51 = 489 +$ _____

[Cairo - Heliopolis 23]

A. 0.51   B. 51

C. 1.51   D. 5.1

5. $0.2 +$ _____ $= 72$ [El Kalyoubia 23]

A. 7   B. 0.7

C. 70   D. 0.07

6. $3.7 \times 100 =$ _____   [Port Said 23]

A. 37   B. 370

C. 3,700   D. 0.37

7. $5.26 \times 100 =$ _____   [Ismailia 23]

A. 5.260   B. 0.526

C. 526   D. 52.6

8. If multiply decimal number by 10, then decimal point will move to _____

[Giza – Abo El Nomrous 23]

A. left   B. right

C. not move   D. other

9. $0.12 \times 10 \bigcirc 2.1 \times 10$

[El Beheira – Housh Essa 23]

A. <   B. >

C. =

10. 5,000 not equals _____

[Giza – Awseen 23]

A. $5 \times 1,000$ B. 50×100

C. 500×10 D. 500×100

11. $28.4 \div$ _____ $= 2.84$

[Aswan - Kom Ombo 23]

A. 10

B. 100

C. 1,000

D. 10,000

12. Which of the following is NOT equivalent to 42.187 ?

A. $40 + 2 + 0.1 + 0.87$

B. $40 + 2 + 0.1 + 0.08 + 0.007$

C. $42 + 0.187$

D. $40 + 2 + 0.187$

37

▶ **Comparing Decimals**

Learn | **How to compare two decimals**

You can use place-value charts to compare decimals.

▶ Examples

Compare 2.948 and 2.957

Ones				Decimals		
H	T	O		Tenths	Hundredths	Thousandths
		2	.	9	4	8
		2	.	9	5	7

- Begin with the digit in the greatest place value.
- Compare ones : 2 ones = 2 ones
- Compare tenths : 9 tenths = 9 tenths
- Compare hundredths : 4 hundredths < 5 hundredths

So, 2.948 < 2.957

Compare 0.26 and 0.206

Ones				Decimals		
H	T	O	.	Tenths	Hundredths	Thousandths
		0	.	2	6	0
		0	.	2	0	6

- Begin with the digit in the greatest place value.
- Compare ones : 0 ones = 0 ones
- Compare tenths : 2 tenths = 2 tenths
- Compare hundredths : 6 hundredths > 0 hundredths

So, 0.26 > 0.206

Example 1

Use place-value chart to compare the following decimals :

a. 52.008 and 52.8   b. 3.02 and 3.019   c. 67.5 and 67.500

Notes for parents :
- Remind your child to begin comparing with the greatest place value.

Solution

a.

Ones				Decimals		
H	T	O	.	Tenths	Hundredths	Thousandths
	5	2	.	0	0	8
	5	2	.	8	0	0

$5 = 5$, $2 = 2$, $0 < 8$ Since, $0 < 8$

So, $52.008 < 52.8$

b.

Ones				Decimals		
H	T	O	.	Tenths	Hundredths	Thousandths
		3	.	0	2	0
		3	.	0	1	9

$3 = 3$, $0 = 0$, $2 > 1$ Since, $2 > 1$

So, $3.02 > 3.019$

c.

Ones				Decimals		
H	T	O	.	Tenths	Hundredths	Thousandths
	6	7	.	5	0	0
	6	7	.	5	0	0

$6 = 6$, $7 = 7$, $5 = 5$, $0 = 0$ $0 = 0$

So, $67.5 = 67.500$

> Line up the decimal points. Compare the digits, beginning with the greatest place value.

Example 2

Compare 2.135 and 2.137

Solution

To compare 2.135 and 2.137, follow the following steps :

Step 1	Step 2	Step 3	Step 4
Compare the ones. 2.135 ↓ 2.137 the same number of ones	Compare the tenths. 2.135 ↓ 2.137 the same number of tenths	Compare the hundredths. 2.135 ↓ 2.137 the same number of hundredths	Compare the thousandths. 2.135 ↓ 2.137 $5 < 7$

So , $2.135 < 2.137$

• Ask your child how is comparing decimals like comparing whole numbers.

39

Example 3

Compare using "< , > or =".

a. 0.395 ◯ $\dfrac{385}{1,000}$

b. 28 thousandths ◯ 0.28

c. 4 ones , 4 hundredths , 5 thousandths ◯ 4.054

Solution 💡

a. Since, $\dfrac{385}{1,000} = 0.385$　　　　　　　So, $0.395 > 0.385$

b. Since, 28 thousandths $= 0.028$　　　　　　So, $0.028 < 0.28$

c. Since, 4 ones, 4 hundredths, 5 thousandths $- 4.045$　So, $4.045 < 4.054$

✅ Check your understanding

Compare using ">, < or =".

a. 3.204 ◯ 3.24

b. 19.2 ◯ 19 200

c. 20.7 ◯ 20.077

d. 1.01 ◯ 1.099

e. 9.08 ◯ 9.079

f. 14.010 ◯ $14\dfrac{9}{10}$

g. 4.12 ◯ $4 + 0.1 + 0 007$

h. 5 thousandths ◯ 0.500

Notes for parents :
- Ask your child to explain the strategies he/she uses to compare decimals.

1. Rewrite the decimals in the chart. Use the symbols "> , < or =".

a. 4.08   ◯   4.8

Ones			.	Decimals		
H	T	O	.	Tenths	Hundredths	Thousandths

b. 15.3   ◯   15.300

Ones			.	Decimals		
H	T	O	.	Tenths	Hundredths	Thousandths

c. 230.03   ◯   230.009

Ones			.	Decimals		
H	T	O	.	Tenths	Hundredths	Thousandths

2. Compare the decimal numbers using the symbols "> , < or =".
Draw a place value table to help you, if needed.

a. 0.2   ◯   0.193   **b.** 0.013   ◯   0.031

c. 0.007   ◯   0.07   **d.** 📖 45.057   ◯   45.100

e. 0.10   ◯   0.100   **f.** 📖 98.013   ◯   98.101

g. 📖 50.009   ◯   50 100   **h.** 📖 10.1   ◯   10 011

i. 34.56   ◯   3.456   **j.** 0.48   ◯   0.480

k. 📖 2.01   ◯   2.099   **l.** 📖 34.5   ◯   34.500

m. 87.3   ◯   87.03   **n.** 2.197   ◯   2.179

o. 2.19   ◯   2.190   **p.** 3.011   ◯   3.001

41

3. 🔲 At the Fayoum Basin, temperatures vary greatly. The numbers are the temperatures recorded on one day in May. All numbers are in degrees Celsius. Compare each set of numbers using the symbols ">, < or =".

a. 29.9°   30.2°

c. 40.5°   — 41.0°

e. 38.80°   —— 38.8°

b. 36.5° ——— 35.6°

d. 35.2° ——— 34.7°

4. Compare the numbers using ">, < or =".

a. 2.71   ◯ $2\frac{8}{100}$

b. 2.007   ◯ $7\frac{2}{1,000}$

c. 1.002   ◯ $\frac{1,002}{1,000}$

d. 16.24   ◯ $16\frac{224}{1,000}$

e. 4.000   ◯ $\frac{400}{1,000}$

f. 99.257   ◯   1,234 tenths

g. 3 thousandths   ◯ $\frac{30}{100}$

h. Eighteen thousandths   ◯   0.02

i. 8 tenths   ◯   0.799

j. 0.402   ◯   402 thousandths

k. 5.102   ◯   5 + 0.1 + 0.02

l. 4.904   ◯   4 + 0.9 + 0.004

m. 8 + 0.009   ◯   8 + 0.1 + 0.001

n. 407.05   ◯   400 + 7 + 0.005

o. 7 ones, 5 thousandths   ◯   7.05

p. 2 ones, 3 tenths, 4 thousandths   ◯   2.34

q. 8.004   ◯   4 ones, 8 thousandths

r. $3\frac{4}{1,000}$ ◯   3 ones, 4 hundredths

42

5. Circle all the decimal numbers that are greater than 4.3

   3.4 , 4.03 , 4.34 , 4.300 , 3.99 , 4.7 , 4.003

6. Circle all the decimal numbers that are smaller than 2.104

   2.102 , 2.401 , 2.14 , 2.199 , 2.11 , 2.7 , 2.014

7. 📖 Select the largest number :

   1.401 , 1.341 , 1.440 , 1.055 , 1.3 , 1.30 , 1.28 , 1.49

8. 📖 Select the smallest number :

   20.09 , 20.1 , 20.001 , 20.011 , 20.10 , 20.010 , 20.9 , 20.21

9. Order from least to greatest.

   a. 1.401 , 1.055 , 1.3 , 1.28   (Cairo - Heliopolis 23)

   b. 1.662 , 1.616 , 1.661 , 1.166

   c. 0.096 , 2.56 , 1 26 , 0.27   (El Menia 23)

   d. 45 072 , 45.008 , 45.702 , 45.729 , 4.572

   e. 80.21 , 80.012 , 8.102 , 8.012 , 80.09

10. Youssef ran 2.2 kilometers during track practice and

    Nader ran 2.099 kilometers.

    Who ran the greater distance ?

11. 📖 Give an example of two decimal numbers where the number with more decimal digits

    is smaller than the other number.

12. 📖 Give an example of two decimal numbers where the number with more decimal digits

    is equal to the other number.

43

Choose the correct answer.

1. 3.24 ◯ 3.239

A. >   B. <

C. =

2. 25.12 ◯ 25.056   (El Beheira)

A. >   B. <

C. =   D. ≤

3. 36.5 ——— 35.6   (Port Said 23)

A. <   B. >

C. =   D. Others

4. 5.36 > ———

[Cairo – Al Khalifa and Al Mokattam]

A. 5.37   B. 5.362

C. 5.366   D. 3.561

5. 19 hundredths ◯ 19 thousandths

A. >   B. <

C. =

6. Which of the following is true?

A. $0.532 > 0.537$ B. $0.1 + 3 < 1.3$

C. $1.019 > 1.1$ D. $\frac{18}{10} = 1.8$

7. $4 + 0.2 + 0.05 + 0.007$ ◯ 4257 hundredths

A. >   B. <   C. =

8. 3.408 ◯ $\frac{348}{100}$

A. >   B. <

C. =

9. $14.1 \blacksquare 7 > 14.158$

A. 3   B. 4

C. 5   D. 6

10. 5 ones, 5 thousandths ◯ 5.05

A. >   B. <   C. =

11. Which of the following is NOT true?

A. $14.14 > 14.014$

B. $\frac{143}{100} = 1.43$

C. $2.051 > 2.501$

D. $2.005 < 5.002$

12. All the following are equal except ——

A. 0.300   B. 0.3

C. 0.003   D. 0.30

44

◆ Rounding Decimals

Learn Different strategies to round decimals

You can round (approximate) decimal numbers using one of the following strategies :

❶ Midpoint strategy.

❷ Rounding rule strategy.

> **Did You Know?!**
>
> *Table tennis is one of the world's most popular games. It became an Olympic sport in 1988. A table tennis ball weighs between 2.4 grams and 2.53 grams ≈ 2.5 grams*

First Midpoint strategy

To round decimals using midpoint strategy, do as follows :

1. Draw a vertical number line.

2. Put the two numbers that the given number lies between them.

3. Put their midpoint.

4. If the given number is at or above the midpoint, round up and if the given number is below the midpoint, round down.

Example 1

Use midpoint strategy to round each of the following.

a. 19.7 (to the nearest whole number or Unit).

b. 4.62 (to the nearest Tenth).

c. 8.765 (to the nearest Hundredth).

Solution

a. • 19.7 is between 19 and 20

   • 19.5 is the midpoint between the two numbers 19 and 20

   • 19.7 is closer to 20 because 0.7 is above the midpoint , then 19.7 ≈ 20
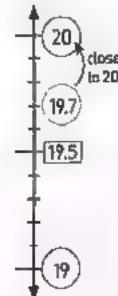
Notes for parents :

• Remind your child with midpoint and rounding rule strategies he/she learned in Primary 4.

b. • 4.62 is between 4.6 and 4.7

• 4.65 is the midpoint between the two numbers 4.6 and 4.7

• 4.62 is closer to 4.6

because 0.02 is below the midpoint

, then $4.62 \approx 4.6$

(4.7)

[4.65]

(4.62) close to 4.6

(4.6)

---

c. • 8.765 is between 8.76 and 8.77

• 8.765 is the midpoint between the two numbers 8.76 and 8.77

• 8.765 is closer to 8.77

because 0.005 is at the midpoint

, then $8.765 \approx 8.77$

(8.77)

[8.765]

(8.76)

Second Rounding rule strategy

To round decimals using rounding rule strategy, do as follows :

1. Underline the digit in the place you want to round the decimal number to it.
2. Look at the digit to its right and circle it.

This circled digit is

Less than 5

Leave out the circled digit and the other digits to the right.

Equal to 5 or more

Increase the underlined digit by one, and leave out the other digits to the right.

Example 2

Use rounding rule strategy to round the decimal number 18.5376 to the nearest whole number, Tenth, Hundredth and Thousandth.

Solution

• $18.5\underline{3}76 \approx 19$ (to the nearest whole number) $= 5$

• $18.5\underline{3}76 \approx 18.5$ (to the nearest Tenth) $3 < 5$

• $18.53\underline{7}6 \approx 18.54$ (to the nearest Hundredth) $7 > 5$

• $18.537\underline{6} \approx 18.538$ (to the nearest Thousandth) $6 > 5$

Remarks

• Rounding to the nearest Tenth, the result should include at most 1 decimal digit

• Rounding to the nearest Hundredth, the result should include at most 2 decimal digits and so on.

Notes for parents :

• Remind your child to round up if the digit to the right of the place value he/she wants to round is equal to or greater than 5

46

Example 3

Round each number to the place of the underlined digit:

a. 28.12   b. 6.247   c. 12.5928   d. 47.051

e. 5.9184   f. 0.6697   g. 402.601   h. 0.995

Solution

a. $\overset{1<5}{28.12} \approx 28$ b. $\overset{4<5}{6.247} \approx 6.2$ c. $\overset{8>5}{12.5928} \approx 12.593$ d. $\overset{=5}{47.051} \approx 47.1$

e. $\overset{8>5}{5.9184} \approx 5.92$ f. $\overset{7>5}{0.6697} \approx 0.670$ g. $\overset{6>5}{402.601} \approx 403$ h. $\overset{=5}{0.995} = 1.00$

Example 4

a. Write down the smallest decimal, less than one, that includes only the digits 3 , 6 , 4 and 2 , then round that number to the nearest Hundredth and to the nearest Thousandth.

b. Write down the greatest decimal, less than one, that includes 4 digits which are 5 , 9 , 2 and 7 , then round that number to the nearest Hundredth and to the nearest Thousandth.

Solution

a. To write the smallest decimal less than one, put the decimal point (0.), then write the given digits arranged ascendingly from the left to the right.
- The smallest decimal less than one − 0.2346
- 0.2346 ≈ 0.23   (to the nearest Hundredth)
- 0.2346 ≈ 0.235   (to the nearest Thousandth)

b. To write the greatest decimal, less than one, put the decimal point (0.) , then write the given digits arranged descendingly from the left to the right.
- The greatest decimal less than one = 0.9752
- 0.9752 ≈ 0.98   (to the nearest Hundredth)
- 0.9752 ≈ 0.975   (to the nearest Thousandth)

✓ Check your understanding

Round each number to the place of the underlined digit.

a. 8.1437 ≈ —————   b. 52.5 ≈ —————   c. 35.1072 ≈

d. 17.97 ≈   e. 55.524 ≈ —————   f. 1.5698 ≈ —————

g. 2.4355 ≈ —————   h. 0.215 ≈ —————   i. 1.595 ≈ —————

- Remind your child how he/she write the smallest and the greatest decimal formed from given digits.
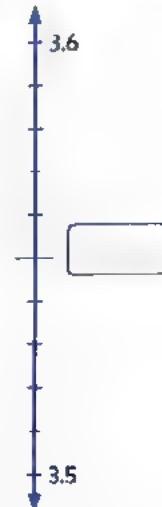
47

1. **Label the midpoint of the number line. Place the given decimal number at its proper location.**
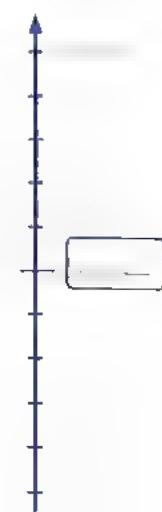
a. 📖 Approximate the number 7.7 to the nearest Unit.
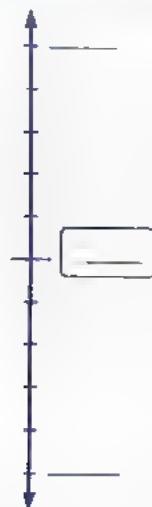
b. 📖 Round 3.54 to the nearest Tenth.

c. 📖 Round 1.277 to the nearest Hundredth.

d. Round 3.4562 to the nearest Thousan· t

2. Round each of the following numbers to the nearest whole number.

a. $0.7 \approx$ _____

b. $0.215 \approx$ _____

c. $0.512 \approx$ _____

d. $99 \approx$ _____

e. $51.56 \approx$ _____

f. $18.58 \approx$ _____
(Giza - El Agouza 23)

g. $600.601 \approx$ _____

h. $0.999 \approx$ _____

i. $0.009 \approx$ _____

3. Round each of the following numbers to the nearest Tenth.

a. $8.378 \approx$ _____
(Alexandria 23)

b. $83.914 \approx$ _____

c. $90.09 \approx$ _____

d. $0.208 \approx$ _____

e. $43.95 \approx$ _____

f. $3.92 \approx$ _____

g. $476.23 \approx$ _____
(Ismailia 23)

h. $0.07 \approx$ _____

i. $502\frac{37}{100} \approx$ _____

4. Round each of the following numbers to the nearest Hundredth.

a. $76.514 \approx$ _____

b. $65.567 \approx$ _____
(El Beheira 23)

c. $91.364 \approx$ _____
(Monofia - Tala 23)

d. $0.737 \approx$ _____

e. $0.996 \approx$ _____

f. $3\frac{8}{1000} \approx$ _____

5. Round each of the following numbers to the nearest Thousandth.

a. $2.0509 \approx$ _____

b. $0.0474 \approx$ _____

c. $4.6798 \approx$ _____

d. $19.9996 \approx$ _____

e. $0.0004 \approx$ _____

f. $0.9986 \approx$ _____

6. Round each of the following to the place of the underlined digit.

a. $36.916 \approx$ _____

b. $5.548 \approx$ _____

c. $1.98 \approx$ _____

d. $0.087 \approx$ _____

e. $0.081 \approx$ _____

f. $20.367 \approx$ _____

g. $3.998 \approx$ _____

h. $0.09 \approx$ _____

i. $0.8 \approx$ _____

j. $1.499 \approx$ _____

k. $1.088 \approx$ _____

l. $1.0229 \approx$ _____

49

7. Complete the following table as you round each decimal to the stated place value.

	Number	Round to the nearest			
		Ones	Tenth	Hundredth	Thousandth
a.	123.3569	123	123.4	123.36	123.357
b.	528.2025				
c.	43.5426	___	___	___	___
d.	21.84792	___	___	___	___
e.	0.5297	___		___	___
f.	0.0546	___	___	___	___
g.	4.2688	___	___	___	___

8. 📖 Mazen is planning a trip from Cairo to the waterfall region in Wadi El Rayan. He will travel 147.72 kilometers. Round the distance to the nearest Tenth.

_____

9. 📖 Mazen stops to have a snack and stretch after driving 73.255 kilometers. Round the distance to the nearest Hundredth.

_____

10. 📖 A farmer is building a new fence for her sheep field. She wants to build a fence around the whole field. Estimate how much fencing you think she will need by rounding each dimension to the nearest Tenth. Explain your thinking.

125.45 m

89.52 m

_____

50

11. Write the greatest decimal less than one which consists of 6 , 4 , 3 and 5 , then round it to the nearest Tenth and Hundredth.

12. Write the smallest decimal less than one which consists of 2 , 5 , 1 and 7 , then round it to the nearest Hundredth and Thousandth.

13. Name two decimals with digits in the Thousandths place that should be rounded to the Tenth place as 0.3

14. Write three decimals , if we round each of them to the nearest Hundredth becomes 12.25

15. Write three decimals , if we round each of them to the nearest Thousandth becomes 86.398

16. Discover directly the error in each rounded result to the nearest Hundredth, give reason.

    a. $73.625 \approx 73.62$ b. $200.081 \approx 200.07$

17. 📖 Read the passage , and then answer the question.

    There are several cascades along the stream between the two lakes in Wadi El Rayan. The distance between the falls is approximately 30 to 35 meters , and the width of the island dividing the cascades is between 20 and 50 meters.

    A geologist measured the exact distance between two of the falls at 31.45 meters and between two others at 36.921 meters. If both distances were rounded to the nearest whole number, would they fall into the range given in the passage ? Explain your thinking.

💡 Challenge

18. Complete with suitable digits.

    a. $2.7\boxed{\ }8 \approx 2.79$ (to the nearest Hundredth)

    b. $20.12\_6 \approx 20.123$ (to the nearest Thousandth)

    c. $9.2\_6 \approx 9.237$ (to the nearest Thousandth)

    d. $19.\_5 \approx 20.00$ (to the nearest Hundredth)

51

Multiple Choice Questions

Choose the correct answer:

1. Round 8.0<u>9</u>9 to the place of the underlined digit.

   A. 7.00   B. 8.08

   C. 8.090   D. 8.1

2. Round 2.5698 to the nearest Thousandth.

   A. 2.569   B. 2.560

   C. 2.57   D. 2.568

3. 18.58 ≈ _____

(to the nearest whole number)

   A. 59   B. 19

   C. 18   D. 18.6

[Giza – Awseem 23]

4. 1.450 ≈ _____

(to the nearest Tenth)

   A. 10   B. 1

   C. 1.5   D. 15

[Souhag 23]

5. Which number could be rounded to 0.58 ?

   A. 0.589   B. 0.57

   C. 0.59   D. 0.577

6. 49.386 ≈ 49.4 (to the nearest _____)

   A. Ones   B. Tenth

   C. Hundredth   D. Thousandth

7. 21.345 ≈ _____

(to the nearest Hundredth)

   A. 21   B. 21.3

   C. 21.34   D. 21.35

[Cairo 23]

8. 82.497 ≈ 82.50

(to the nearest _____)

   A. whole number   B. Tenth

   C. Hundredth   D. Thousandth

9. $2\dfrac{7}{1,000} \approx$ _____

(to the nearest Hundredth)

   A. 2   B. 2.1

   C. 2.01   D. 2.007

10. 3.8⬚9 ≈ 3.85

(to the nearest Hundredth)

   A. 3   B. 4

   C. 5   D. 6

11. 999.9 ≈ _____

(to the nearest whole number)

   A. 990   B. 999

   C. 1,000   D. 900

12. 3.649 ≈ _____

(to the nearest 2 decimal places)

   A. 3.74   B. 3.65

   C. 3.54   D. 4.6

[El Kalyoubia 23]

Adding and Subtracting Decimals

▸ **Estimating Decimal Sums**

■ **Modeling Decimal Addition**

Learn ① Estimating decimal sums

Sameh measured the tallness of his son.

He found that his son is 1.15 meter tall.

Sameh said that his son is about 1 meter tall.

. **Estimation** is a way to get a number that is close
to the actual answer but not exact.

• In this lesson, you will learn many ways to
estimate decimal sums.

1 Front-end estimation strategy

• Write the first digit of the number from the left as it is.
• Change the rest of digits into zeroes.

For Example:
- 12.18 is closer to 10.00 = 10
- 417.59 is closer to 400.00 = 400

Example 1

Estimate each of the following sums by using
front-end estimation.

a. $3.41 + 5.22$

b. $41.925 + 52.236$

Solution 🔽

a. $3.41 + 5.22$ Estimate: $3 + 5 = 8$

b. $41.925 + 52.236$ Estimate: $40 + 50 = 90$

Notes for parents :
- Remind your child that he/she just looks at the first digit of the number from the left
  side, or the highest place value when estimating using front-end strategy.

2 Benchmark decimals strategy

- The benchmark numbers are 0, $\frac{1}{2}$, 1
- The benchmark decimal for one-half is $0.5 = 0.50 = 0.500$

closed to 0	closed to 0.5	closed to 1

0 0.5 1

For Example :
- Each of : 0.1, 0.01, 0.001 is closer to 0
- Each of : 0.9, 0.99, 0.999 is closer to 1
- Each of : 0.52, 0.46, 0.611, 0.395 is closer to 0.5

Example 2

Estimate each of the following sums by using benchmark decimals.

a. $0.41 + 0.58$

b. $0.6 + 0.391$

c. $12.492 + 13.659$

d. $14.999 + 3.01$

Solution 💡

a. $0.41 + 0.58$

Estimate : $0.5 + 0.5 = 1$

b. $0.6 + 0.391$

Estimate : $0.5 + 0.5 = 1$

c. $12.492 + 13.659 = 12 + 0.492 + 13 + 0.659$

Estimate : $12 + 0.5 + 13 + 0.5 = 26$

d. $14.999 + 3.01 = 14 + 0.999 + 3 + 0.01$

Estimate : $14 + 1 + 3 + 0 = 18$

Hint

You can separate wholes and parts before using benchmark decimals.

- Remind your child that benchmark decimals are common decimals that he/she can use to judge and compare other decimals.

55

3 Rounding strategy

You can round decimals in many ways to the nearest Hundredths, Tenths, Ones (units, Tens, Hundreds and so on.

For Example :

```
4.872  ──  is rounded to  ──┬── Hundredths ──→  4.87
                            ├── Tenths     ──→  4.9
                            └── Ones (units) ──→  5
```

```
89.672 ── Is rounded to ──┬── Hundredths ──→ 89.67
                          ├── Tenths     ──→ 89.7
                          ├── Ones (units) ──→ 88
                          ├── Tens        ──→ 90
                          └── Hundreds    ──→ 100
```
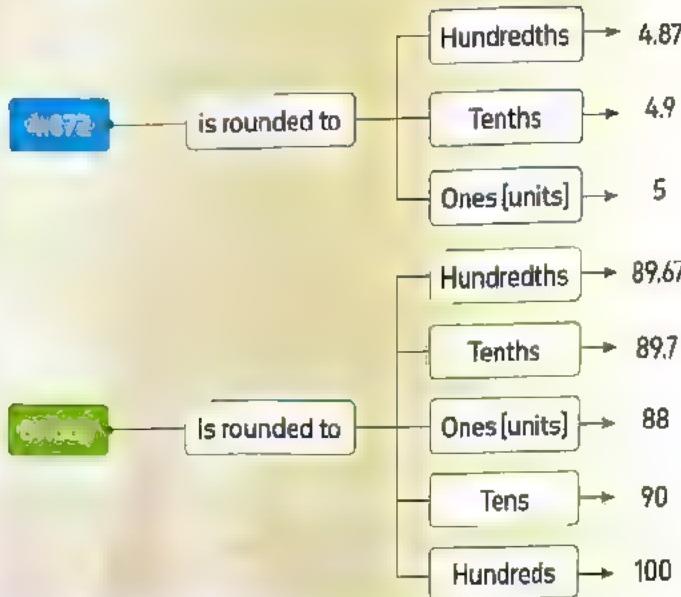
Example 3

Estimate the sum 45.561 + 14.047 by using rounding.

Solution

- 45.561 + 14.047 Estimate : 50 + 10 − 60 (to the nearest Tens)
- 45.561 + 14.047 Estimate : 46 + 14 = 60 (to the nearest Ones)
- 45.561 + 14.047 Estimate : 45.6 + 14.0 = 59.6 (to the nearest Tenths)
- 45.561 + 14.047 Estimate : 45 56 + 14 05 = 59.61 (to the nearest Hundredths)

Note that

Rounding to the lowest place value will give you the most accurate estimation

Check your understanding

Estimate each of the following sums by using more than one strategy.

a. 4.39 + 7.12 _____

b. 62.815 + 37.109 _____ _____

c. 15.98 + 24.021 _____ _____

Notes for parents :
- Remind your child to round up if the digit to the right of the place value he/she wants to round is equal to or greater than 5. and round down if it is less than 5.

Learn ② Modeling decimal addition

To evaluate : 0.45 + 0.15

- Use two different colors to create a model of the expression : 0.45 + 0.15
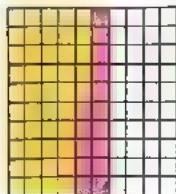
45 Hundredths + 15 Hundredths = 60 Hundredths

So, 0.45 + 0.15 = 0.60

- Use the place-value chart.

Ones				Decimals	
H	T	O	.	Tenths	Hundredths
		0	.	4	5
		0	.	1	5

```
   ①
  0 . 4 5
+ 0 . 1 5
---------
  0 . 6 0
```

To add decimal numbers

1. Put the decimal points under each other.
2. Put zeroes to the right of the last decimal digit, so that each number has the same number of digits after the decimal point.
3. Add by starting from the right to the left.

To evaluate : 0.22 + 0.53

- Use the model.
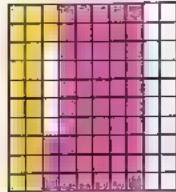
22 Hundredths + 53 Hundredths = 75 Hundredths

So, 0.22 + 0.53 = 0.75

- Use the place-value chart.

Ones				Decimals	
H	T	O	.	Tenths	Hundredths
		0	.	2	2
		0	.	5	3

```
  0 . 2 2
+ 0 . 5 3
---------
  0 . 7 5
```

Another way of modeling decimal addition :

- Make sure that when your child adds decimals, he/she puts the decimal points under each other

57

To evaluate : 0.86 + 0.62

- **Use the model.**
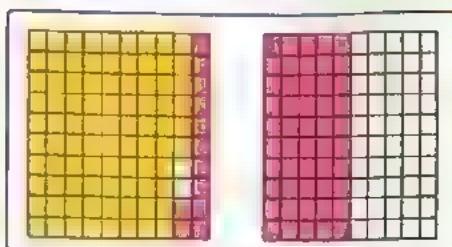
86 Hundredths

+ 62 Hundredths

= 148 Hundredths

So, 0.86 + 0.62 = 1.48

- **Use the place-value chart.**

Ones				Decimals	
H	T	O	.	Tenths	Hundredths
		0	.	8	6
		0	.	6	2

```
        ①
      0   8  6
  + 0 . 6  2
    1 . 4  8
```

To evaluate : 0.4 + 0.03 + 0.02

- **Use the model.**
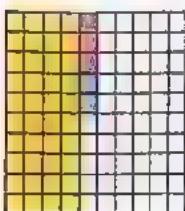
4 Tenths + 3 Hundredths + 2 Hundredths

= 40 Hundredths + 3 Hundredths + 2 Hundredths

= 45 Hundredths

So, 0.4 + 0.03 + 0.02 = 0.45

- **Use the place-value chart.**

Ones				Decimals	
H	T	O	.	Tenths	Hundredths
		0	.	4	0
		0	.	0	3
		0	.	0	2

```
    0 . 4  0
  + 0 . 0  3
  + 0 . 0  2
    0 . 4  5
```

Notes for parents :

- Remind your child that there are more than one model for any addition statement.

58

To evaluate : 2,923.42 + 4,581.3

It is impossible to use the model

So, use the place-value chart.

Thousands	Ones				Decimals	
	H	T	O	·	Tenths	Hundredths
0	9	2	3	·	4	2
2	9	2	3	·	4	2
4	5	8	1	·	3	0

$$
\begin{array}{r}
① \; ① \\
2,923.42 \\
+ \, 4,581.30 \\
\hline
7,504.72
\end{array}
$$

Example 4

Add each of the following.

a. 3.13 + 5.49

b. 127.3 + 16.45

c. 14.72 + 7.5 + 0.231

Solution 💡

a.
$$
\begin{array}{r}
① \\
3.13 \\
+ \, 5.49 \\
\hline
8.62
\end{array}
$$

b.
$$
\begin{array}{r}
① \\
127.30 \\
+ \quad 16.45 \\
\hline
143.75
\end{array}
$$

c.
$$
\begin{array}{r}
①① \\
14.720 \\
+ \quad 7.500 \\
+ \quad 0.231 \\
\hline
22.451
\end{array}
$$

Note

You can add decimals horizontally as follows :
$$
\overset{①}{3.13} \; + \; 5.49 \; = \; 8.62
$$

✓ check your understanding

Add the following.

a. 0.21 + 0575

b. 213 01 + 27992

c. 3 Hundredths + 4 Thousandths = _____

d. 13 Hundredths + 65 Thousandths = _____

• Let your child learn that the modeling decimal adding strategy is impossible to use when adding large numbers.

● REMEMBER ● UNDERSTAND ○ APPLY ♣ PROBLEM SOLVING   📖 From the school book.

1. Estimate each of the following sums.

   a. $0.52 + 0.49$

   Estimate ————

   b. 📖 $3.451 + 8.091$

   Estimate ————

   c. $7.99 + 4.011$

   Estimate ————

   d. 📖 $9.98 + 4.56$

   Estimate ————

   e. $42.998 + 42.091$

   Estimate ————

   f. 📖 $4.981 + 5.019$

   Estimate ————

2. Write an expression to match each of the following models, then use each model to evaluate the expression.

a.

—— + —— = ——
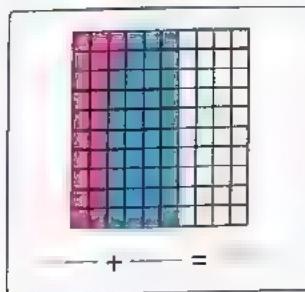
b. 📖

—— + —— = ——
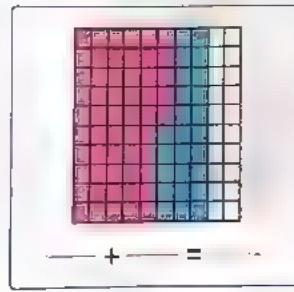
c.

—— + —— = ——
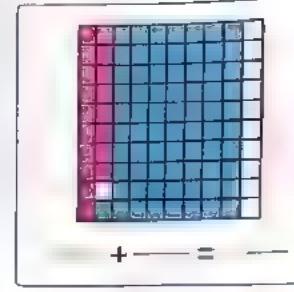
d.

—— + —— = ——
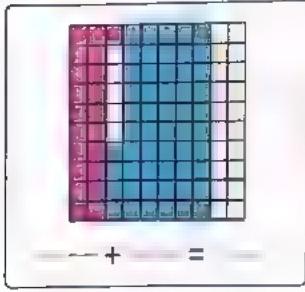
e.

—— + —— = ——
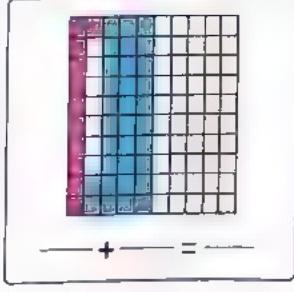
f.

—— + —— = ——
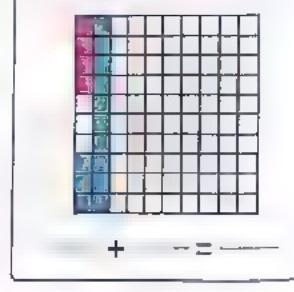
3. Complete each of the following.

a. 📖 • Estimate 0.13 + 0.23 ————

    • Use two different colors to create
      a model of the expression 0.13 + 0.23
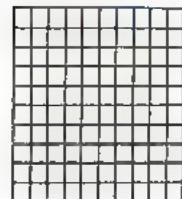
• Record 0.13 and 0.23 in the place-value chart.

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths

• Evaluate : 0.13 + 0.23 = ————

b. 📖 • Estimate 0.05 + 0.05 ————

    • Use two different colors to create
      a model of the expression 0.05 + 0 05
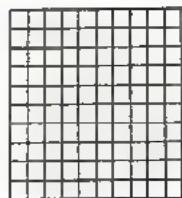
• Record 0.05 and 0.05 in the place-value chart.

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths

• Evaluate : 0.05 + 0.05 = ————

c. 📖 • Estimate 0.45 + 0.84 ————

    • Use two different colors to create
      a model of the expression 0.45 + 0.84
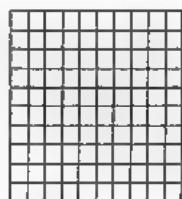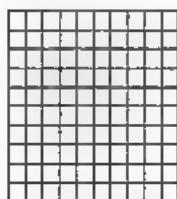
• Record 0.45 and 0.84 in the place-value chart.

Thousands	Ones			.	Decimals	
O	H	T	O	.	Tenths	Hundredths

• Evaluate : 0.45 + 0.84 = ————

61

d. 📖 **.** Estimate 0.92 + 0.89

   • Use two different colors to create
     a model of the expression 0.92 + 0.89

   • Record 0.92 and 0.89 in the place-value chart.

Thousands	Ones			.	Decimals	
0	H	T	O	.	Tenths	Hundredths
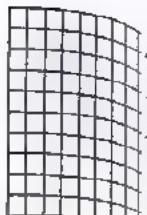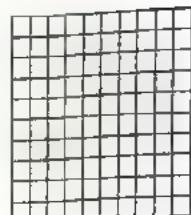
   • Evaluate : 0.92 + 0.89 = ———

e. 📖 **.** Estimate 0.97 + 0.42 ———

   • Use two different colors to create
     a model of the expression 0.97 + 0.42

   • Record 0.97 and 0.42 in the place-value chart.

Thousands	Ones			.	Decimals	
0	H	T	O	.	Tenths	Hundredths
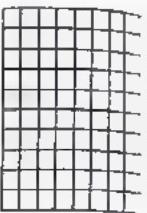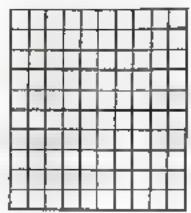
   • Evaluate : 0.97 + 0.42 = ———

f. • Estimate 1.9 + 0.62 ———

   • Use two different colors to create a model of the expression 1.9 + 0.62
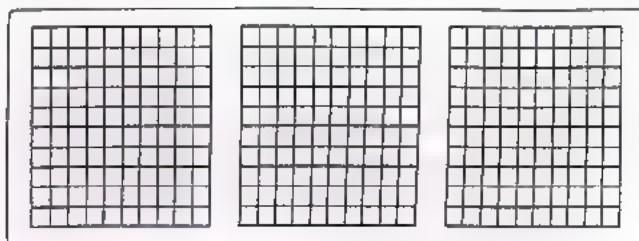
   • Record 1.9 and 0.62 in the place-value chart.

Thousands	Ones			.	Decimals	
0	H	T	O	.	Tenths	Hundredths

   • Evaluate : 1.9 + 0.62 = ———

62

4. Find the result of each of the following.

a.
```
  0 . 2 3 1
+ 0 . 7 5 4
```

b.
```
  2 . 5 3
+ 0 . 1 9
```

c.
```
  4 . 8 9
+ 0 . 8 7
```

d.
```
  1 6 . 3 4
+    8 . 7 9
```

e.
```
  7 . 5 1
+ 6 . 4 9 2
```

f.
```
  9 6 7 . 6 3
+     9 1 . 2
```

g.
```
  4 8 . 4 2
+ 5 9 . 0 9 6
```

h.
```
  3 5 . 0 0 1
+ 1 4 . 9 9 9
```

i.
```
  4 . 1 5
+ 8 . 6
+ 9 . 2 8 3
```

5. Find the result of each of the following.

a. $14.63 + 34.25 =$ —————

b. $17.3 + 4.6 =$ —————

c. $2.65 + 9.3 =$ —————

d. $0.875 + 0.43 =$ —————

e. $1.007 + 9 =$ —————

f. $13 + 2.75 =$ —————

g. $213.01 + 27.99 =$ —————

h. $12.179 + 11\frac{1}{4} =$ —————

6. Find the result of each of the following.

a. $37.42 + 43.01 + 19.15 =$ —————

b. $28.65 + 17.3 + 2.05 =$ —————

c. $6 + 3.65 + 4.912 =$ —————

d. $53.245 + 1.97 + 213.8 =$ —————

e. $900.333 + 690.222 + 9.445 =$ —————

f. $12.7 + 10.007 + 3.07 =$ —————

7. Complete the missing digits.

a.
```
  3 . ☐ 7
+ 6 . 5 ☐
  ☐ . 8 9
```

b.
```
  1 . ☐ 6
+ 3 . 3 ☐
  ☐ . 3 3
```

c.
```
  9 7 . 4 8
+ 4 3 . ☐ ☐
☐ ☐ ☐ . 9 3
```

8. Complete the following.

a. 4 Thousandths + 3 Thousandths = ———— Thousandths

b. The sum of $4.287 + 8.65 =$ —————

(El Menia - Deir Mawas 23)

63

c. The sum of 1.324 + 5.25 = ———.   (Cairo - El Sherouk 23)

d. 9 Hundredths + 56 Hundredths = ——— Hundredths.   (Cairo - Heliopolis 23)

e. 2 Thousandths + 3 Hundredths = ——— Thousandths.   (Cairo - El Sherouk 23)

f. 5 Thousandths + 46 Hundredths = ——— Thousandths.   (Cairo 23)

g. 5 Tenths + 5 Thousandths = ——— Thousandths.   (Cairo - El Marg 23)

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9. 📖 If a farmer can lift 94.635 liters of water a minute in his shadoof, about how many liters can he lift in 4 minutes ?

_____

---

10. 📖 Samar wanted to ride her bike 40 kilometers this week. By Thursday, she had ridden 34.99 kilometers. On Friday, she rode 4.01 kilometers. Estimate to see if she has met her goal.

Estimate : _____

11. 📖 Taha has 54.20 L.E. His brother has 45.75 L.E. They want to combine their money to purchase a box of apples for 100 L.E. Estimate to see if they have enough money.

Estimate : _____

Choose the correct answer.

1. The benchmark of 0.85 is ——— [Souhag 23]

A. 0.5   B. 1

C. 0   D. 85

2. The estimate of the sum of
$35.762 + 63.014$ is ——— [Cairo - Al Kha.ifa and Al Mokattam 23]

A. 99   B. 80

C. 98.76   D. 110

3. $4.7 + 3.07 = $ ———

A. 7.14   B. 8.4

C. 7.77   D. 7.014

4. $0.05 + 0.05 = $ ——— [Port Said 23]

A. 0.55   B. 0.1

C. 10   D. 5.5

5. $2 + 0.05$ ☐ $1.7 + 0.7$

A. <   B. =   C. >

6. $1.7 + 0.2$ ☐ $1.33 + 0.51$

A. <   B. =   C. >

7. $20 + 0.078 = $ ——— [Cairo - El Sherouk 23]

A. 20.078   B. 20.78

C. 20708   D. 20.807

8. $2,892.5 + 5,137.05 = $

A. 8,029.55   B. 8,029.5

C. 8,030   D. 8,029.1

9. 7 Tenths + 3 Tenths = ——— [Cairo - El Salam 23]

A. 1   B. 10

C. 100   D. 1,000

10. 4 Thousandths + 3 Thousandths = ——— Thousandths. [Port Said 23]

A. 7,000   B. 7

C. 0.7   D. 0.07

11. 4 Hundredths + 35 Thousandths = ———

A. 0.39   B. 0.039

C. 0.07   D. 0.075

12. 71 Hundredths + 9 Hundredths = ——— Tenths.

A. 88   B. 80

C. 800   D. 8

- **Modeling Decimal Subtracting**
- **Estimating Decimal Differences**
- **Subtracting to the Thousandths Place**

Learn 1 — Estimating decimal differences

You can use the strategies of estimation
that you studied in the previous lesson
to estimate decimal differences as the
following example.

Example 1

Estimate each of the following.

a. $39.79 - 20.027$ b. $18.95 - 11.7$ c. $0.88 - 0.72$

Solution

a. $39.79 - 20.027$ estimate : $40 - 20 = 20$
                                    [if you round to the nearest Ten

b. $18.95 - 11.7$ estimate : $19 - 12 = 7$
                                    [if you round to the nearest One

c. $0.88 - 0.72$ estimate : $0.9 - 0.7 = 0.2$
                                    [if you round to the nearest Tenth

    $0.88 - 0.72$ estimate : $1 - 1 = 0$
                                    [if you round to the nearest One

✓ Check your understanding

Estimate each of the following.

a. $0.92 - 0.76$ b. $17.01 - 13.9$ c. $140.61 - 99.43$

_____

_____

_____

Notes for parents :

- Remind your child that estimation is a way to get a number that is close to
another number but not exact.

Learn 2 — Modeling Decimal Subtracting

To evaluate : 0.52 – 0.14

1. Shade a model to represent the minuend (0.52).
2. Add X's to represent the subtrahend (0.14).
3. Count the shaded squares without (X) which is the difference.

- Use the model.

52 Hundredths – 14 Hundredths = 38 Hundredths

So, 0.52 – 0.14 = 0.38

To subtract decimal numbers

1 Put the decimal points under each other.

2 Put zeroes to the right of the last decimal digit, so that each number has the same number of digits after the decimal point.

3 Subtract by starting from the right to the left.
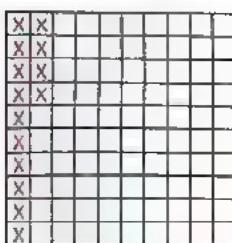
- Use the place-value chart.
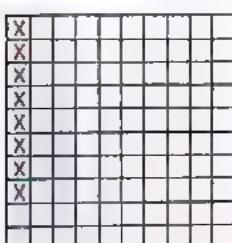
Ones				Decimals	
H	T	O	·	Tenths	Hundredths
		0	·	5	2
		0	·	1	4

$$\begin{array}{r} \overset{4}{}\overset{12}{} \\ 0.\ \cancel{5}\ \cancel{2} \\ -\ 0.\ 1\ 4 \\ \hline 0.\ 3\ 8 \end{array}$$

- You can subtract the previous numbers horizontally as follows :

$$0.\overset{4}{\cancel{5}}\overset{12}{\cancel{2}} - 0.14 = 0.38$$

To evaluate : 0.3 – 0.08

- Use the model.

30 Hundredths – 8 Hundredths = 22 Hundredths

So, 0.30 – 0.08 = 0.22

- Use the place-value chart.

Ones				Decimals	
H	T	O	·	Tenths	Hundredths
		0	·	3	0
		0	·	0	8

$$\begin{array}{r} \overset{2}{}\overset{10}{} \\ 0.\ \cancel{3}\ \cancel{0} \\ -\ 0.\ 0\ 8 \\ \hline 0.\ 2\ 2 \end{array}$$

Note that —
Adding zeroes to the right of the last decimal digit does not change its value.

- Remind your child to put the decimal points under each other when subtracting decimals.

To evaluate : $3,204.4 - 1,823.015$

- It is impossible to use the model. So, use the place-value chart.

Thousands	Ones				Decimals		
	H	T	O	.	Tenths	Hundredths	Thousandths
0		H	T	O	.		
3	2	0	4	.	4	0	0
1	8	2	3	.	0	1	5

```
           11
      2   ⅔  10      3  9  10
   3,  ⅔  ⅜  4.  ⅘  ⅜  ⅜
 -  1,  8  2  3.  0  1  5
   1,  3  8  1.  3  8  5
```

Example 2

Subtract each of the following.

a. $5.43 - 2.21$ b. $8.6 - 6.51$ c. $20 - 11.624$

Solution

a.
```
   5. 4 3
 - 2. 2 1
 ─────────
   3. 2 2
```

b.
```
        5  10
   8.  ⅚  ⅜
 - 6.  5  1
 ───────────
   2.  0  9
```

c.
```
     1  9  9  9  10
    ⅔  ⅜. ⅜  ⅜  ⅜
 -  1  1.  6  2  4
 ──────────────────
     8.  3  7  6
```

✓ Check your understanding

Subtract each of the following.

a. $2.325 - 0.214$

b. $12.78 - 3.5$

c. 97 Thousandths − 49 Thousandths.

d. 7 Hundredths − 32 Thousandths.

Notes for parents :
- Remind your child that adding zeroes to the right of the last decimal digit does not change its value.

● REMEMBER   ERSTAND   ○ APPLY   ♣ PROBLEM SOLVING   📖 From the school book

---

1. **Estimate each of the following.**
   a. $2.62 - 1.59$ estimate ————

   b. 📖 $2.419 - 1.240$ estimate

   c. 📖 $35.9 - 10.8$ estimate

   d. $214.024 - 113.78$ estimate ————

   e. $0.951 - 0.729$ estimate

---

2. **Write an expression to match each of the following models, then use each model to evaluate the expression.**

   a.

   ——— ——— = ———

   b.

   ——— ——— = ———

   c. 📖

   ——— ——— = ———

   d. 📖

   ——— ——— = ———

   e. 📖

   ——— ——— = ———

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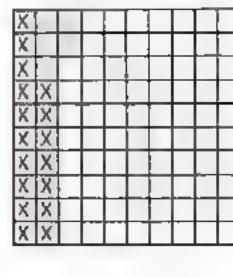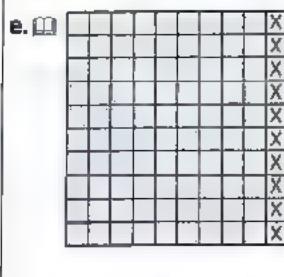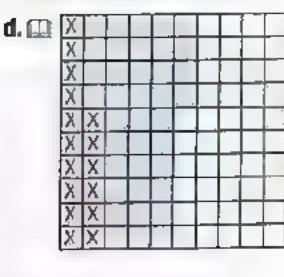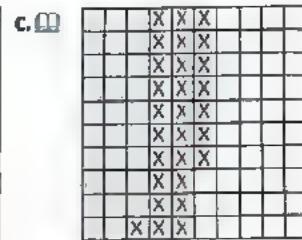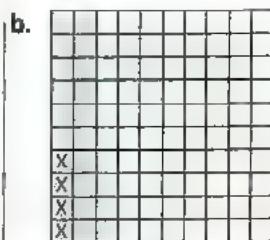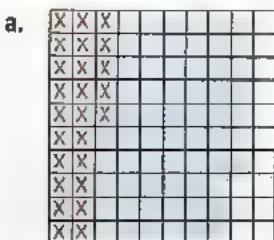
3. **Create a model to match each of the following expressions and evaluate each of them.**

   a. $0.67 - 0.49 =$ ————

   b. 📖 $0.1 - 0.09 =$

   c. 📖 $0.39 - 0.13 =$
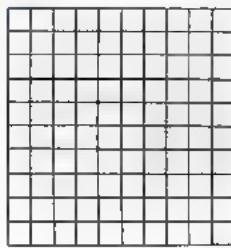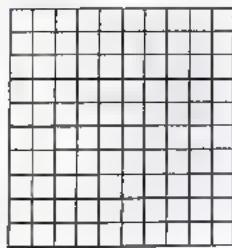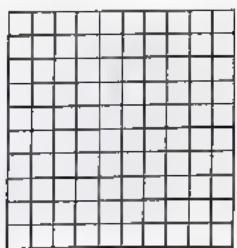
d. 📖 1.23 − 1.02 =
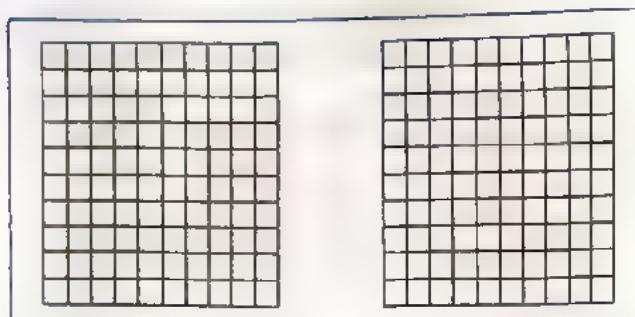
e. 2.34 − 1.19 =
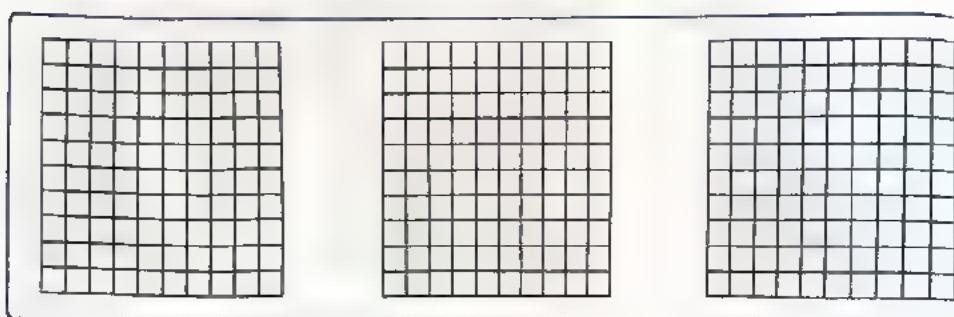
f. 📖 4.14 − 3.09 = _____
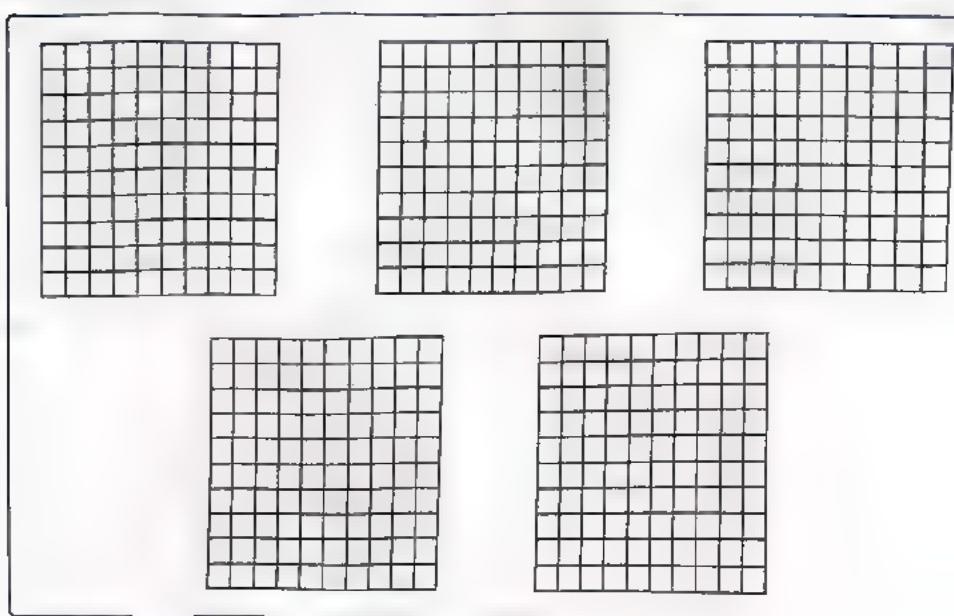
4. Complete the table.

The expression	Estimating difference	Actual difference
a. 3.94 – 1.23 =	————	————
b. 📖 29.98 – 11.99 –	————	————
c. 📖 0.97 – 0.82 =	————	————
d. 📖 5.05 – 4.15 =	————	————
e. 📖 4.45 – 4.32 =	————	————

5. Find the result of each of the following.

a.
```
  0. 7 8 1
- 0. 5 3 1
_____
```

b.
```
  0. 5 9 3
- 0. 1 9 4
_____
```

c.
```
  0. 5
- 0. 3 7 5
_____
```

d.
```
  3, 2 1 8. 9 7 5
-     2 1 8. 8 5 3
_____
```

e.
```
  4, 5 2 4. 6 2
- 2, 4 9 8. 1 2 4
_____
```

f.
```
  4, 6 1 1. 3
- 1, 9 8 2. 4 5
_____
```

6. Find the result of each of the following.

a. $5.473 - 3.362 =$ ————

b. $4.66 - 2.09 =$ ————

(Aswan - Kom Ombo 23)

c. $8.659 - 4.32 =$ ————

(Cairo – El Marg 23)

d. $100 - 47.85 =$ ————

e. $0.9 - 0.889 =$ ————

f. $12.74 - 0.359 =$ ————

g. $5.27 + 8.39 - 3\frac{14}{100} =$ ————

h. $512 + 88.35 - 67.035 =$ ————

7. Complete.

a. $1.6 +$ ———— $= 9.6$

b. ———— $+ 3.9 = 6.5$

c. ———— $+ 54.8 = 77.59$

d. $85.47 +$ ———— $= 100$

e. $6.27 -$ ———— $= 3.286$

f. ———— $- 3\frac{3}{5} = 7.634$

g. $33.3 -$ ———— $= 12.008$

h. ———— $- 41.41 = 3.8$

71

8. Find the missing digits.

a.
```
    5 . 6 9
  - 4 . □ □
  ─────────
    □ . 4 5
```

b.
```
    9 . 5 1 □
  - □ . □ □ 1
  ───────────
    4 . 2 4 2
```

c.
```
    1 1 3 . 5 7 □
  -     1 3 . □ □ □
  ─────────────────
    □ □ □ . 1 7
```

d.
```
    5 . □ 8 □
  - 1 . 4 1 3
  ───────────
    □ . 3 □ 7
```

e.
```
    2 9 9 . □ □ □
  -     □ □ . 4 5 7
  ─────────────────
    2 4 3 . □ 3 □
```

f.
```
    □ □ . □ □
  - 2 3 . 9 7
  ───────────
    1 8 . 9 5
```

9. Put the suitable relation (< , = or >).

a. 3.5 – 2.1 ◯ 3.5 + 2.1
[Alexandria - First Montaza 23]

b. 1.471 – 0.53 ◯ 0.951

c. 7.32 – 1.93 ◯ 6.78 – 0.42

d. 58.003 – 57.03 ◯ 1 + 0.973

e. 99.89 – 90.09 ◯ 10 – 1.01

f. 4.722 – 0.009 ◯ 8 – 3.228

g. 6.18 + 3.82 ◯ 87.56 – 77.5

h. 0.2 – 0.05 ◯ 4.9 – 4.75

10. Evaluate each difference. Then identify each digit's place value.

a. 98 Thousandths – 5 Thousandths = ——— Thousandths
   Place value : ——— Hundredths and ——— Thousandths

b. 📖 57 Thousandths – 12 Thousandths = ——— Thousandths
   Place value : ——— Hundredths and ——— Thousandths

c. 📖 32 Thousandths – 15 Thousandths = ——— Thousandths
   Place value : ——— Hundredths and ——— Thousandths

d. 📖 5 Hundredths – 24 Thousandths = ——— Thousandths
   Place value : ——— Hundredths and ——— Thousandths

e. 7 Hundredths – 17 Thousandths = ——— Thousandths
   Place value : ——— Hundredths and ——— Thousandths

f. 8 Tenths – 42 Thousandths = ——— Thousandths
   Place value : ——— Tenths, ——— Hundredths and ——— Thousandths

72

Multiple Choice Questions

Choose the correct answer.

1. 2.419 − 1.240 = ———

A. 1.230   B. 1179

C. 1.239   D. 3.659

[Aswan 23]

2. Estimate 4.09 − 2.99 is ———

A. 1   B. 1.5

C. 2.5   D. 6

[Cairo - Heliopolis 23]

3. 7 Tenths − 7 Thousandths = ———

A. 0.693   B. 0.63

C. 6.3   D. Zero

4. 7 Tenths − 63 Hundredths

= ——— Hundredths. [Cairo - El Nouzha 23]

A. 70   B. 700

C. 7   D. 7000

5. 7 Hundredths − 7 Thousandths

= ——— Thousandths.

[Cairo - Al Khalifa and Al Mokattam 23]

A. 7   B. 0

C. 63   D. 77

6. 99.9 − 9.99 = ———

A. 90.09   B. 90.9

C. 8919   D. 89.91

7. 77.55 − 1.9 ◯ 76.21 − 0.8

A. >   B. <

C. =

1621

8. 3.2 + 4.05 ◯ 7.05 + $\frac{1}{2}$

A. >   B. <

C. =

[Giza - Awseem 23]

9. 94.▢8 − 9.82 = 84.46

A. 1   B. 2

C. 3   D. 4

10. 9 − 4.653 = ———

A. 5.347   B. 4.347

C. 3.347   D. 5.653

11. Which of the following expressions represents the model ?

A. 0.23 − 0.04

B. 0.4 − 0.23

C. 0.04 − 0.023

D. 40 − 23
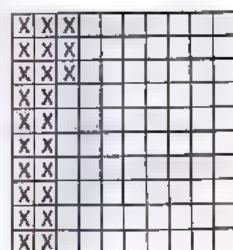
12. 9.3 − ——— = 8.254

A. 1.146   B. 1.46

C. 1.046   D. 17.554

73

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▶ **Decimal Story Problems**

Learn How to solve story problems?

1. Read carefully and determine what is being asked.
2. Plan and write an equation or expression to solve the story problem.
3. Solve the problem and be sure to include units in your answer.
4. Check the reasonableness of your answers.

> Read to understand
> Plan
> Solve
> Check
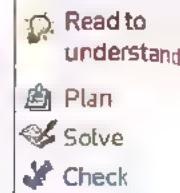
Example 1

Soha saved 17.25 L.E. and her brother Amgad saved 8.5 L.E.
Find the sum they saved.

Solution

The sum they saved = 17.25 + 8.5 = 25.75 L.E.

Example 2

Wael has 14.75 pounds and his sister Mariam has 950 piasters.
Find the difference between what they have in pounds.

Solution

The difference = 14.75 pounds – 950 piasters
= 14.75 pounds – 9.5 pounds = 5.25 pounds

Example 3

Waleed bought a pair of trousers for 89.6 L.E. and a shirt for 30.75 L.E.
if he gave 200 L.E. to the shopkeeper,
how much change remained with Waleed ?

Solution

• The price of pair of trousers and shirt = 89.6 + 30.75 = 120.35 L.E.
• The change remained with Waleed = 200 – 120.35 = 79.65 L.E.

Notes for parents :

• Some story problems have hidden question or questions that must be answered before you can solve the problem. You have to determine what operation to use and what strategies you will use to help you figure out how to solve the problem.

● REMEMBER ● UNDERSTAND ○ APPLY ♣ PROBLEM SOLVING   📖 From the school book

1. Ola saved 17.25 pounds and her brother Hosam saved 8.5
   pounds.   [Giza - Awseem 23]

   Find the sum they saved.

2. Salma has 90.5 pounds, she bought a toy by 64.75 pounds

   How much money remaining with Salma ?   [El Kalyoubia 23]

3. The sum of two numbers is 65.324 and one of them is 4.21

   Find the other one.   [Souhag 23]

4. A farmer has a piece of land. Its area is 80.74 m². He planted
   a part of it, its area is 53.2 m².   [Beheira - Housh Essa 23]

   Find left area without planning.

5. Fares bought 9.8 kilograms of apples, 4.6 kilograms of fig.

   Find the total weight of apple and fig together ?

          [Cairo El Zaiton 23]

6. Evon has 1.275 kg of flour, she wants to make a cake
   for her children. If the cake needs 2 kg of flour.

   How many more flour does Evon need ? [Cairo - El Nouzha 23]

75

7. Hossam has 4.25 L.E. and his sister

Hend has 980 P.T.

Find the difference between what they have in pounds.

8. Hanaa has 200 pounds. She wants to buy a pair of shoes for 99.8 L.E. , a bag for 45.75 L.E. and a dress for 70.25 L.E.

Can she buy all what she wants ? Why ?

9. 📖 Nile perch is 110 centimeters long and more than 5 years old. It weighs 113.39 kilograms and the vundu catfish weighs 38.1 kilograms and is 188 centimeters long.

What is the total mass of both the Nile perch and the vundu catfish ?

10. 📖 Read the passage and then respond to the questions.

You will now travel from Khartoum to Juba in South Sudan to see the source of the White Nile. This trip is 1,941.2 kilometers. Juba is also on the bank of the White Nile. From Juba, you will travel on to Jinja, Uganda. It is a distance of 687.9 kilometers. Jinja is located near the source of the White Nile.

How long is your journey from Khartoum to Jinja ?

a. Copy the place-value chart and record the addends.

Thousands	Ones			.	Decimals		
O	H	T	O	.	Tenths	Hundredths	Thousandths
				.			
				.			

b. Write and solve an addition equation using the two decimal numbers.

_____ + _____ = _____

11. 📖 Read the passage and answer the questions.

Tahya Misr Bridge

The Tahya Misr Bridge was built in 2016 in Cairo. It serves as a connector across the Nile from northern and eastern Cairo to western Cairo. The bridge is 540 meters long and 67.3 meters wide. It holds the world record for the widest cable-stayed bridge in the world The longest cable-stayed bridge is the Jiaxing-Shaoxing Sea Bridge in China.
It is 11.7 meters thinner than the Tahya Misr Bridge. How wide is the Jiaxing-Shaoxing Sea Bridge?

---

12. 📖 The total length of the Tahya Misr Bridge is 16.7 kilometers. If Rami travels the length of the Tahya Misr Bridge and then returns, how many kilometers in total did he travel? Write an equation and your answer.

---

13. 📖 The total length of the Tahya Misr Bridge is 16.7 kilometers. Salem rode his bike along the pedestrian section of the bridge. He rode 3.25 kilometers before he had a flat tire. How many more kilometers does he need to travel?

---

14. 📖 The Tahya Misr Bridge was built using 200 cranes. The cranes varied in size and weighed between 6.44 and 544.3 tons (1 ton = 1,000 kilograms). What is the difference between the lightest crane and the heaviest crane?

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15. 📖 Rashad and his father went on a fishing trip to Lake Nassar. They each caught a huge vundu catfish. The first one weighed 53.25 kilograms and the smaller one weighed 46.8 kilograms. How much did the fish weigh in all?

77

Unit One Assessment

1. Choose the correct answer.

1. The value of digit 4 in the number 32.041 is   [Giza – El Agouza 23]

   A. 4   B. 0.4   C. 0.04   D. 0.004

2. 5.023 ☐ 5.019   [El Kalyoubia 23]

   A. <   B. >   C. ‒

3. Which number could be rounded to 0.69 ?

   A. 0.679   B. 0.698   C. 0.68   D. 0.686

4. $1 + 0.7 + 0.07 =$ ———   [El Menia 23]

   A. 17.7   B. 1.77   C. 77.1   D. 1.71

5. A car covers 2.5 km in one minute, then the distance covered in 3 minutes =   km.

                                                    [Cairo – El Salam 23]

   A. 75   B. 5.7   C. 7   D. 5.4

6. $42.18 \times 10 =$ ———   [Giza – Awseem 23]

   A. 4.218   B. 421.8   C. 42.18   D. 4,218

7. $55.5 - 5.55 =$ ———   [Cairo – El Nouzha 23]

   A. 50.05   B. 50.5   C. 49.95   D. 49.59

2. Complete the following.

1. $0.0257 \approx$ ——— [Rounding to the nearest Thousandths]   [Giza 2

2. $8 + 0.2 + 0.03 + 0.006 =$ ——— [In standard form]   [El Beheira 2]

3. $23.578 \approx$ ——— [To the nearest Tenths]   [Cairo 2]

4. 8 Thousandths + 95 Hundredths =   ——Thousandths   [El Menia – De r Mawas 23]

5. $461.12 \div 10 =$ ———

6. The value of 7 in the number 5.167 is ———   [Cairo – El Nouzha 23, Monofia – Tala 23]

7. $2 \times$ ——— $= 200\,000$ [Port Said 23]

8. $36.479 \approx 36.50$ [to the nearest ———]   [Giza – Awseem 23]

3. Choose the correct answer.

1. The place value of 8 in 85.324 is ————
   A. Tenths   B. Tens   C. Hundredths   D. Hundreds

2. $1.5 - 0.75 =$ ————
   A. 0.75   B. 7.5   C. 1.8   D. 1.25

3. $0.3 \bigcirc 3$ Thousandths.
   A. <   B. >   C. =

4. $34.6 \times$ ———— $= 34,600$
   A. 10   B. 100   C. 1,000   D. 10,000

5. The number (fifteen and fifteen thousandths) in expanded form is ————
   A. $10 + 5 + 0.1 + 0.005$ B. $10 + 5 + 0.05 + 0.001$
   C. $10 + 5 + 0.01 + 0.005$ D. $10 + 5 + 0.1 + 0.05$

6. $0.3 + 0.15 =$ ————
   A. 0.45   B. 0.25   C. 0.20   D. 0.18

7. Rounding the number 56.284 to the nearest Hundredths is ————

   A. 56.28   B. 56.82   C. 56.3   D. 56.29

---

4. Answer the following questions.

1. Which is greater 3,508.42 or 358.32 ?

   _____

2. Marvina walked from home to her school a distance 1.215 km. , then she walked from her school to her grandmother home a distance 2.09 km.
   What is total distance did Marvina cover ?

   _____

3. Decompose the number 60,047 using the expanded form.

   _____

4. If the sum of two decimal numbers is 40.1 and the smaller number of them is 4.992 , what is the greater decimal number ?

   _____

79

UNIT 2

Number Relationships

▶ **Concept 1 :**
  Expressions, Equations
  and the Real World

▶ **Concept 2 :**
  Factors and Multiples

Did you know ?!

Giraffes are the world's
tallest living land animals.
An adult male can grow to
around 5.5m - that's taller
than three adult humans!

Expressions, Equations and the Real World

Lesson No.	Lesson Name	Learning Objectives
Lesson 1	Expressions, Equations and Variables	• Students will explain the difference between expressions and equations. • Students will explain why there might be an unknown in an expression or equation. • Students will use letters or symbols to represent unknowns in expressions and equations.
Lessons 2&3	Variables in Equations	• Students will apply the relationship between addition and subtraction to find the value of the unknown in an equation.
	Telling Stories with Numbers	• Students will write story problems involving addition and subtraction of decimal numbers. • Students will solve equations involving decimal numbers to the Thousandths place.

Learn ① Mathematical expressions and equations

Sameh saved 25 L.E. to buy his favourite
meal which costs 52 L.E.

$25 + ? = 52$

How much does Sameh need to save more ?

You can translate this problem into a mathematical
statement contains a missing number as

$$25 + ? = 52$$

If you replace the missing number by any letter
(x , y , a , b ,...) , you will get :

$$25 + x = 52$$
$$\downarrow$$
$$\text{Variable}$$

The statement $25 + x = 52$ is called an **Equation** and the used letter "x"
is called a **symbol , variable or unknown.**

Mathematical Expression	Equation
Mathematical expression is a statement contains numbers or numbers and symbols separated by one or more operations as : $(+ , - , \times$ and $\div)$ and doesn't contain the equal sign "="	Equation is a mathematical expression contains the equal sign "="
▸ **Examples :**	▸ **Examples :**
• $7.4 + 2.5 - 1.5$ • $49 - x - 24.5$ • $10 \times 3 \div 5$ • $42 \div k$ • $2.5 + m$ • $15 \div 3 \times 2$	• $24.8 - x = 17.5$ • $36.5 + 14.1 = k$ • $4.2 + 1.5 = 8.9 - 3.2$ • $7.36 + 1.036 + 2.5 = b$

Notes for parents :
• Ask your child to explain the difference between expression and equation.

Example 1

Read the following mathematical statements, then sort them into equations, expressions or neither.

- $13.35 + x = 16.25$
- $42 + k - 3.15$
- Sara bought a shirt for 145.75 L.E. and a skirt for 189.5 L.E.
- $30 \times m = 300$
- Sum of two numbers s 85.25 and one of them is 25.15
  What is the other?
- $2.5 + 3.6 = 1.8 + 4.3$

- $25.06 + 6.2 + 5$
- $55 - m = 17$

- $y = 2.55 + 3.13 + 7.15$

- $z \div 2 + 5$

145.75 L.E.

189.5 L.E.

Solution

Equations	Expressions	Neither
• $13.35 + x = 16.25$ • $55 - m = 17$ • $30 \times m = 300$ • $y = 2.55 + 3.13 + 7.15$ • $2.5 + 3.6 = 1.8 + 4.3$	• $25.06 + 6.2 + 5$ • $42 + k - 3.15$ • $z \div 2 + 5$	• Sara bought a shirt for 145.75 L.E. and a skirt for 189.5 L.E. • Sum of two numbers is 85.25 and one of them is 25.15. What is the other?

✓ check your understanding

Write "equation, expression or neither" in front of each statement.

a. Hany saves 15 L.E. every day. How much does Hany save in a week? (———————)

b. $2.45 + 13.12 - 5$ (———————)

c. $1.8 + x = 2.8$ (———————)

d. $3.6 + 1.4 - 5$ [———————]

e. $35.45 - k = 15$ [———————]

f. The sum of two numbers is 13.8 (———————)

- Explain that the equation doesn't change if the symbol is changed. For example, the two equations $2.5 + x = 3.4$ and $2.5 + y = 3.4$ are equivalent.

83

Equations in real world :

You can use many equations in your daily life, sometimes you need to write equations to help you solve story problems.

Example 2

Youssef has 90 L.E. Youssef and his sister Sandy have together 150 L.E.

If their sister Eman has 110 L.E.,

write an equation to represent each of the following :

a. The sum of money that Youssef and Eman have.

b. The money that Sandy has.

Solution 💡

a. $90 + 110 = x$

b. $150 - 90 = y$

or $90 + y = 150$

or $150 - y = 90$

> **MATH IDEA**
> The symbol x represents the total money that Youssef and Eman have.

> **MATH IDEA**
> The symbol y represents the money that Sandy has.

✓ Check your understanding

Yasser, Eman and Mazen, their heights are shown.

a. Write an equation to represent the sum of heights of Eman and Mazen.

_____
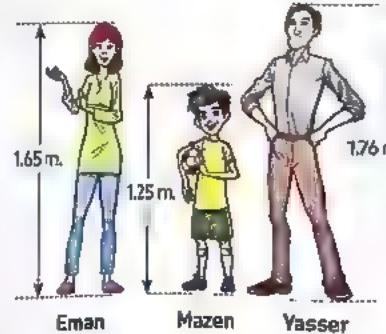
b. In the equation $1.65 + x = 1.76$, what does the symbol x represent ?

_____

1.65 m.

1.25 m.

1.76 r

Eman   Mazen   Yasser

Notes for parents :
• Let your child use letters to represent unknowns in equations.

84

● REMEMBER ● UNDERSTAND ○ APPLY ♣ PROBLEM SOLVING | 📖 From the school book

1. Mark (✓) for the correct answer.

	Equation	Expression	Neither
$3.6 + x + 5.45$			
$2 + 3 = 4 + 1$			
$35.6 + 4.23 = x$			
Sum of two numbers is 15			
$8.43 - 2.34 = y + 2.85$			
15.68 more than a number			
$k - 15.8 + 7.18$			

2. 📖 Write equation, expression or neither between the two brackets.

a. $3.6 + 1.6 - x$ 　　　[　　　　　]

b. $14.78 - 3.4$ 　　　[　　　　　]

c. $7.5 + 3.65$ 　　　[　　　　　]

d. $25.6 - 9$ 　　　[　　　　　]

e. $14 \times 7 - x$ 　　　[　　　　　]

f. $9 - x = 3.5$ 　　　[　　　　　]

g. $4.7 + 3.6 = M$ 　　　[　　　　　]

h. $345.45 - 123.8 = x$ 　　　[　　　　　]

i. $6.4 + 3.2 + 8$ 　　　[　　　　　]

j. $3.5 + 2.456 = 2.5 + 3.456$ 　　　[　　　　　]

k. $125 - 27.3$ 　　　[　　　　　]

l. $14.2 - 3.575$ 　　　[　　　　　]

m. $56 - x = 47.5$ 　　　[　　　　　]

n. $37.125 - 13.7$ 　　　[　　　　　]

o. $3.4 + l$ 　　　[　　　　　]

p. Amir had 3.5 kg of apples and 2.7 kg of figs. 　　　[　　　　　]

q. Aya ran a total of 8 km last week. She ran 3.75 km on Monday. How much did she run the rest of the week?

r. $7.3 + 4.5 + 2.3 = A$ 　　　[　　　　　]

　　　[　　　　　]

85

3. **Write an equation with a variable to represent each of the following.**

   a. The sum of a number and 6.5 is 9   [———————

   b. A number if added to 17 the sum is 2.8   [———————

   c. If 9.23 is subtracted from a number, then the result is 23.15   [

   d. Sum of two numbers is 17.35 and one of them is 14.15   [———————

---

4. A class contains 40 pupils, 25 from them are boys, write two equations to find the number of girls

   (1) ————————————————————   (2) ————————————————————

---

5. In the toy store, Sameh saw the opposite three toys, Sameh had 42 L.E., then he wrote some equations, what does the variable represent in each equation?

   64.5 L.E.   45.25 L.E.   36.75 L.E

   Plane   Bear   Car

   a. $64.5 + 36.75 = x$

   ————————————————————————————

   b. $45.25 - 36.75 = y$

   ————————————————————————————

   c. $64.5 - 42 = b$

   ————————————————————————————

   d. $a + 42 = 45.25$

   ————————————————————————————

   e. $64.5 + 45.25 + 36.75 = d$

   ————————————————————————————

   f. $45.25 + 36.75 - 42 = m$

   ————————————————————————————

---

6. 📖 If Gulf of Suez is <u>275 km</u> long and Aqaba Gulf is <u>180 km</u> long

   1. Mariam wrote two equations to compare the lengths of the two gulfs.
      Here are her equations.

      • $180 + x = 275$ • $275 - 180 = x$

      What does the letter x represent in these equations?

      A. The length in kilometers of one gulf

      B. The difference in kilometers between the two lengths.

C. The width of Sinai Peninsula.

D. The distance in kilometers between the gulfs.

2. If Mariam were to solve both of these equations correctly, what would be true ?

Select the two correct answers.

A. The value of x would be the same.

B. The answer to 275 – 180 would be 85 km.

C. The difference between the two lengths would be 95 km.

D. The distance in kilometers between the gulfs would be 95 km.

---

7. Adham was comparing the heights of sand dunes in the northern part of Sinai Peninsula in meters. He wrote the equation $27 - 18 = x$

What does the x represent ?

A. The height of one of the dunes in Sinai.

B. The sum of the heights of two dunes in Sinai.

C. The difference between the tallest and shortest sand dunes.

D. The distance between the tallest and shortest sand dunes.

---

8. If Farha knew that the sum of the heights of two sand dunes is 46 meters and one of the dunes is 18.25 m high, which equation could she write to find the unknown height ? Select the two correct answers.

A. $18.25 + x = 46$

B. $18.25 + 46 = x$

C. $46 - 18.25 = x$

D. $x - 18.25 = 46$

---

9. Ehab wrote the equation $42.7 + 38.3 = x$ If each of the numbers represents the height of one of the dunes, what does x represent ?

A. The height difference between the dunes.

B. The sum of the heights of both dunes.

C. The height of the taller dune.

D. The distance between the dunes.

Choose the correct answer.

1. Which of the following represents on equation ?   [El Beheira 23]

A. $4.8 + 2.5$

B. $x - 3.14 = 5$

C. $y + 4.8$

D. $9 - b$

2. Which of the following is an equation ?

A. $15.28 - x + 1.3$

B. $2.45 + x = 1.36 + 5.48$

C. Ramy bought two toys for 75.75 L.E. one of them is for 35.5 LE. What is the price of the other ?

D. $2136 + x$

3. Which of the following is an expression ?

A. $2.36 + x = 14.78$

B. Sara saved 20 L.E. per day

C. $13.15 + 2.8 - x$

D. $1.75 + 1.25 = 2.1 + 0.9$

4. Which of the following is a mathematics expression ?   [Cairo · El Salam 23]

A. $m + 6 = 9$

B. $1.2 - m = 0.2$

C. $3 + 6 = 9$

D. $m + 44$

5. $m + 8.5 = 10$ is called _____   [Souhag 23]

A. multiplication   B. division

C. expression   D. equation

6. The mathematical phrases : $7.5 + 3.6 = m$ represents   [Aswan – Kom Ombo 23]

A. equation   B. variable

C. expression   D. Inequality

7. $y + 12$ is called _____   [El Kalyoubia 23]

A. mathematical expression

B. equation

C. place value

D. value

8. Basma wanted to write an equation with a variable to represent "12.5 plus a number equats 15". Which of the following would be correct ?

A. $12.5 + 15 = x$ B. $12.5 + x = 15$

C. $15 + x = 12.5$ D. $x - 15 = 125$

9. If we subtract 5.23 from a number to get 9.42 , then the suitable equation is _____

A. $5.23 - x = 9.42$ B. $9.42 - 5.23 = x$

C. $x - 5.23 = 9.42$ D. $x + 5.23 - 9.42$

10. Suzan walked 1.63 km. in the first day and 1.72 km. in the second day, then the equation which represents the walked distance in the two days is _____

A. $1.72 - 1.63 = d$ B. $d = 1.63 + 1.72$

C. $d + 1.63 = 1.72$ D. $1.72 - d = 1.63$

88

▶ **Variables in Equations**

▶ **Telling Stories with Numbers**

Learn ❶ **Variables in equations**

Solving equation means finding the value of the variable in the equation.

• You can solve equation in many ways :

❶ Mental math	❷ Inverse operation

❶ Mental math

Example : $15 + x = 18$

What number should be added to 15 to get 18 ?

The answer is 3

, then $\boxed{x = 3}$

❷ Inverse operation

Example : $y - 3.45 = 1.32$

$$y - 3.45 - 1.32$$

inverse operation

, then $y - 1.32 + 3.45 = 4.77$

❸ Using bar model

Example : $4.76 - b = 2.25$

4.76	
b	2.25

$b = 4.76 - 2.25 = 2.51$

Example 1

Solve the following equations.

a. $3.2 + P = 10$ b. $2.13 + 3.45 + h = 7.85$

c. $5.83 - k = 3.454$

Solution 🗹

You can use any way to solve an equation.

a. **Using mental math strategy :**

$3.2 + P = 10$

, the number if we add to 3.2

you get 10 is the number 6.8

, then $\boxed{P - 6.8}$

Check your answer
Replace the variable "P" by 6.8
, $3.2 + ⑥.⑧ = 10$
, then the solution is correct.

Notes for parents :

• If your child struggles to see the relationship between the numbers, review fact families.

$\boxed{89}$

b. Using inverse operation strategy :

$$2.13 + 3.45 + h = 7.85$$

$$5.58 \quad + h = 7.85$$

> **Check your answer**
> Replace the variable "h" by 2.27
> , $2.13 + 3.45 + \boxed{2.27} = 7.85$
> , then the solution is correct.

$$h = 7.85 - 5.58$$
$$h = 2.27$$

c. Using part-to-whole bar model strategy :

$$5.83 - k = 3.454$$

5.83	
k	3.454

$$k = 5.830 - 3.454 = 2.376$$

> **Check your answer**
> Replace the variable "k" by 2.376
> , $5.83 - \boxed{2.376} = 3.454$
> , then the solution is correct.

✓ check your understanding

Solve each of the following equations.

a. $6.45 + x = 10.48$

b. $k - 6.18 = 2.59$

c. $2.85 + 3.152 + n = 7$

d. $3.36 + 2.12 = 1.834 + h$

Notes for parents :
• Let your child check his/her answer using fact family.

90

Example **2**

Hany was travelling to Alexandria from his home which is at a distance 243.865 km. He covered a distance 115.782 km.

What is the remaining distance to Alexandria ?

Solution 💡

243.865	
115.782	x

- The total distance = 243.865 km. (Whole)
- The covered distance = 115.782 km. (Part)
- The remaining distance = x km. (Part)
- The equation is x + 115.782 = 243.865
- Subtract to find the part (x)

  x = 243.865 – 115.782 = 128.083 km.

Another solution using inverse operation

x + 115.782 = 243.865

x = 243.865 – 115.782
  = 128.083

- Check your answer :

  ① ①
  128.083 + 115.782 = 243.865   (Yes it is correct)

✓ check your understanding

1. A truck carries 1.35 ton of fruits and 2.456 ton of vegetables. What is the total load of the truck ?

2. Hany has 73.25 L.E. He spent 10.75 L.E. Find the remainder with him ?

• Help your child write the equation to represent a story problem with an unknown quantity.

91

Learn ② Telling a story

If you are given the two equations:

① $3.526 + 2.045 = X$

② $y + 1.85 = 2.04$

How do you tell a story modeled by each equation?

	① $3.526 + 2.045 = X$	② $y + 1.85 = 2.04$
Step 1 Use the part-to-whole bar model.	X | 3.526 | 2.045	2.04 | y | 1.85
Step 2 Determine the type of the variable (whole or part).	The variable is the whole. You can tell a story where two numbers are known and ask for their sum.	The variable is a part. You can tell a story where the sum of two numbers and one of them are known and ask for the other number.
Step 3 There are a lot of ways to tell a story. "Think and create".	**Example:** Amgad walked 3.526 km from home to school, then he walked 2.045 km from school to club. What is the total distance did Amgad walk?	**Example:** Karim has a wodden board of length 2.04 m. He divided it into two parts, one of them is of length 1.85 m. What is the length of the other part?

✓ Check your understanding

Write a story problem for the equation, then solve it.

$X + 1.357 = 2.18$

_____

_____

_____

Notes for parents :
- Help your child write his / her own story for each equation in this page.

1. Find the value of each variable in the following part-to-whole bar models.

a.

X	
34.750	19.051

b.

121.725	
10.714	Y

c.

78.514	
a	29.125

d.

m	
41.621	52.321

2. Solve the following equations, create a bar model to solve each of the following problems.

a. $a - 3.4 = 2.17$

(Cairo – El Nozha 23)

b. $a + 19.5 = 30.8$

c. $1.2 = 2.4 - r$

d. $8.76 = 5.35 + w$

e. $2.15 + n = 5.24$

(Aswan 23)

f. $7.648 - d = 3.92$
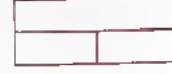
(Aswan – Kom Ombo 23)

g. $2.53 + 4.38 + x = 12.76$

h. $15.38 + c = 9.23 + 16.3$

3. Solve each of the following equations using inverse operation strategy.

   a. $76.85 + q = 90.96$

   b. $k + 2.40 = 3.04$ (Giza – Aswan

   c. $h - 15.32 = 7.83$

   d. $2.5 + 13.25 + m = 24.85$

   e. $1.46 + n = 2.461 + 3.015$

   f. $28.34 - 5.35 = z + 14.83$

   g. $2.563 - b = 1.03 + 0.568$

---

4. ▱ Solve the following equations. Use a place-value chart, if needed.

   a. $8.23 + p = 10.24$ b. $t - 2.45 = 0.26$

   $p = $ ――― $t = $

   c. $2.45 + n = 5.24$ d. $v + 42.89 = 100.01$

   $n = $ ――― $v - $ ―――――

   e. $h - 6.82 = 1.23$ f. $j - 12.40 = 3.01$

   $h = $ ――― $j - $ ――――

   g. $5.52 + 2.01 + m = 9.21$ h. $2.30 + 3.10 = 1.50 + v$

   $m = $ ――― $v = $

Story problems on solving equations

5. In each of the following story problems, write an equation match it, then solve.

   a. The weight of Mariam is 35.235 kg and the weight of
      Luci is 42.012 kg. What is their weight together?

94

b. Nada bought a sandwich for 36.85 L.E and 250 mL of juice for 7.5 L.E.
   What is the cost of the meal ?

   _____

   _____

c. 📖 Ola needed 10 meters of wood to build a garden bed. She found 3.5 m in her garage. How many more meters of wood does she need for the bed ?

   _____

   _____

d. 📖 Bassem is taking a bus from Cairo to Ras Muhammad National Park to visit the coral reefs. The total journey is 492.64 kilometers. After 396.48 km, the bus stops in El Tor to pick up more passengers. How far is El Tor from Ras Muhammad National Park ?

   _____

   _____

e. 📖 Bassem and his friend Jana were snorkeling in Ras Muhammad National Park on the coral reef. Bassem saw a hawksbill sea turtle that was 0.78 meter long. Jana saw a green turtle that was 0 58 m longer. How long was the green turtle ?

   _____

   _____

f. A water tank was filled with 78.563 liter If 36.156 liters is poured from it , how much liter of water did remain ?

   _____

   _____

95
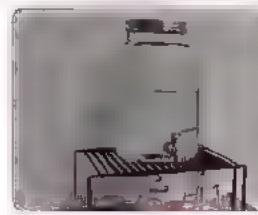
g. Sameh stood on the balance carrying a bag of weight 10.953 kg, the balance reading was 93.215 kg. What is the weight of Sameh ?

h. ▣ At the market, Bassem bought two melons for a total weight of 2.64 kilogram. If one melon weighed 1.36 kg, what was the weight of the other melon ?

i. ▣ In Jana's backpack , she has a water bottle that weighs 1.5 kilograms, books that weigh 2 451 kg and a snack. Her filled backpack weighs 4.535 kg. How much does her snack weigh ?

j. ▣ Nagi s training for a race. Each day of the week he runs 3.5 kilometers. If he runs for 10 days, how far will he have run ?

k. Mina car petrol tank contains 50 liters of petrol, he went to Alexandria, the car consumed 28.95 liter, then he wants to travel to Matrouh. The car will consume 43.5 liter from Alexandria to Matrouh. How many more liters does Mina need to fill In the tank ?

96

1. 📖 Ezz ran three days last week. He ran 5.24 kilometers on Monday and 6.50 km on Wednesday. If he ran a total of 15 km for the week, how much did he run in the third day? What would the variable in the problem represent? Solve the problem.

_____

_____

_____

6. **What is the story?**

   Write a story problem for each of the following equations, then solve it.

   a. $5.25 + 3.8 = n$

   _____

   _____

   b. $7.85 - 3.685 = y$

   _____

   _____

   c. 📖 $x + 2.75 = 12.5$

   _____

   _____

   d. 📖 $124.6 - 72.25 = m$

   _____

   _____

   e. 📖 $34.750 - s = 15.25$

   _____

   _____

   f. $56.125 - d = 3.853$

   _____

   _____

Choose the correct answer

1. The value of variable X in the equation : $X + 4.5 = 8$ is   (El M - Deir Mawas 23)

- A. 35
- B. 4.5
- C. 3.5
- D. 5.5

---

2. If $p + 3.562 = 5.562$, then $p =$
- A. 1
- B. 2
- C. 3
- D. 2.001

3. If $8.24 - y = 3.12$, then $y =$
- A. 5.12
- B. 11.36
- C. 12.15
- D. 14.12

---

4. If $m - 3.459 = 4.213$, then $m =$
- A. 0.754
- B. 1.672
- C. 0.632
- D. 7.672

5. In the opposite part -to- whole bar model , the value of $m =$

8.368	
m	5 032

- A. 13.4
- B. 3.336
- C. 10.456
- D. 2.832

---

6. For the equation : $7325 - x = 4.127$, which of the following part-to-whole bar model is suitable?

A.

x	
7.325	4.127

B.

7.325	
x	4.127

C.

4.127	
7.325	x

D.

x	
4.127	3.198

---

7. By using the bar model : The value of m is _____

3.16	
m	2.8

- A. 2.8
- B. 1.64
- C. 1.8
- D. 0.36

(Cairo - Al Khalifa and Al Mokattam 23)

---

8. The weight of a golden ring is 3 258 gm and that of a golden bracelet is 12 721 gm, then the equation which represents this story is
- A. $3.258 + x = 12.721$
- B. $3.258 + 12.721 = x$
- C. $12.721 - 3.258 = x$
- D. $12.721 + x = 3.258$

---

9. Nada weight was 93.738 kg. She decded to make a diet, her weight becomes 78.135 kg. What weight does Nada lose ?
- A. 14.923 kg.
- B. 12.731 kg.
- C. 10.423 kg.
- D. 15.603 kg.

---

10. A truck was loaded with 6.112 tons of fruits and vegetables. If the weight of fruits is 2.865 tons , what is the weight of vegetables in tons ?
- A. 8.977
- B. 7.879
- C. 3.247
- D. 8.793

---

11. Yosra mixes 0.05 kg of fertilizer with 1.386 kg of soil, she fills a pot with the mixture and has 0.135 kg left over. How much mixture went into the pot ?
- A. 1.436 kg.
- B. 1.571 kg.
- C. 1.305 kg.
- D. 1.301 kg.

Concept 2

Factors and Multiples

N...	...	Learning Objectives
Lessons 4&5	Prime Factorization	• Students will use a factor tree to identify the prime factors of a given number.
	Greatest Common Factor [G.C.F]	• Students will use factor trees to identify common factors of two whole numbers. • Students will use factor trees to identify the greatest common factor of two whole numbers.
Lessons 6&7	Identifying Multiples	• Students will explain the meaning of multiples. • Students will identify the common multiples of two whole numbers up to 12
	Least Common Multiple [L.C.M]	• Students will explain the meaning of the least common multiple. • Students will identify the least common multiple of two whole numbers up to 12
Lesson 8	Factors or Multiples ?	• Students will explain the difference between factors and multiples. • Students will identify the greatest common factor and least common multiple of two given numbers.

Learn ❶ Identify the prime factors of a whole number (Prime factorization)

🔔 Remember

A **Prime number** is a whole number that has exactly two different factors, 1 and itself. Examples for prime numbers . 2, 3, 5, 7, 11, 13, 17	A **Composite number** is a whole number that has more than two factors. Examples for composite numbers 4, 6, 9, 12, 25, 30

How can you write a number as a product of prime factors?

Every composite number can be written as a product of prime factors. This product is called the **prime factorization** of a number. You can use "prime factor tree" to find the prime factorization.

For Example :

To write 24 as a product of prime factors (prime factorization) :

- Write 24 as a product of two factors.
- Write each composite factor as a product.
- Continue until all branches end in prime number
- Circle the prime factors and put a square around the composite factors.
- The prime factorization of 24 is a multiplication string of the circled prime factors.

Notes for parents :
- Give your child a group of numbers and ask him/her to identify the prime numbers and the composite numbers

100
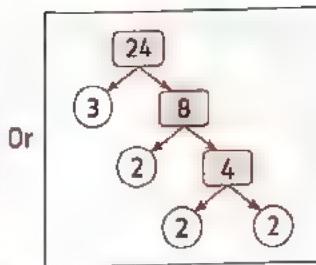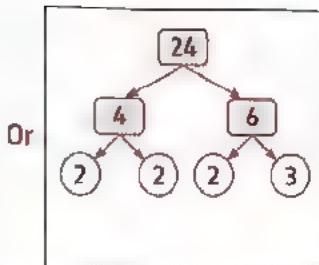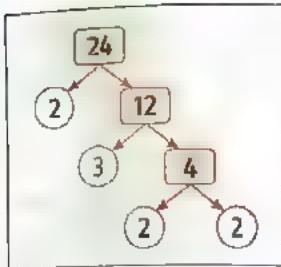
$$24 = 2 \times 2 \times 2 \times 3$$

Example 1

Find the prime factorization for each of the following numbers.

a. 36   b. 28   c. 48

Solution

a.

$$36 = 2 \times 2 \times 3 \times 3$$

b.

$$28 = 2 \times 2 \times 7$$

c.

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$
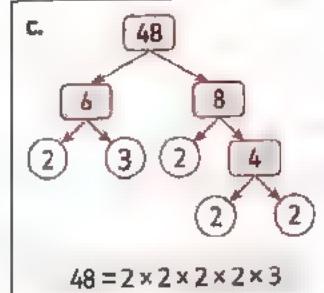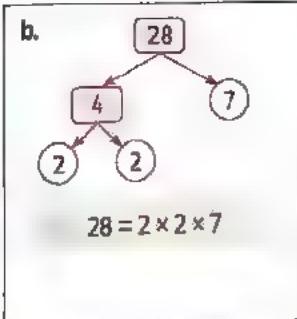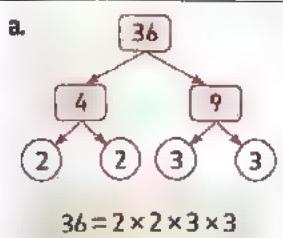
✓ check your understanding

Find the prime factorization for each of the following numbers.

a. 16   b. 45   c. 30

• Help you child by starting his/her factor pairs tree with at least one prime number, so that only one branch continues-this makes it visually easier to manage. Remind him / her to circle the prime numbers as he / she gets. This will help him / her list all the prime factors and also write the prime factorization.

101

Product of prime factors

Given that 2 , 2 and 3 are the prime factors of a number.

What is this number?

The number = The product of all the given prime factors

, then the number = $2 \times 2 \times 3 =$ ⟨ 12 ⟩

What is its composite factors?

Composite factor = Product of 2 or more

factors from the prime factors

Notice

You can find all none prime factors of 12 using (factor rainbow or factor T-chart), then cancel the prime factors from them.

• $2 \times 2 =$ ⟨ 4 ⟩   • $2 \times 3 =$ ⟨ 6 ⟩

• $2 \times 2 \times 3 =$ ⟨ 12 ⟩

, then 4 , 6 and 12 are the composite factors of 12

Join "1" to the list

Notice

The none prime factors of 12 are : ⟨ 1 , 4 , 6 and 12 ⟩
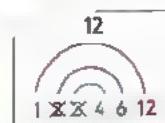
Example 2

Find the product of the prime factorization listed, then list all other factors of the product.

a. $2 \times 2 \times 7$ b. $2 \times 3 \times 5$ c. $2 \times 2 \times 2 \times 3$

Solution

a. Product = $2 \times 2 \times 7 = 28$ Other factors are : 1 , 4 , 14 and 28

b. Product = $2 \times 3 \times 5 = 30$ Other factors are : 1 , 6 , 10 , 15 and 30

c. Product = $2 \times 2 \times 2 \times 3 = 24$ Other factors are : 1 , 4 , 6 , 8 , 12 and 24

✓ Check your understanding

Find the number whose prime factorization is given, then find the other factors for each of the following.

a. $2 \times 3 \times 3 \times 3$ b. $2 \times 5 \times 5$ c. $3 \times 3 \times 7$

Notes for parents :
• Remind your child that not all odd numbers are prime numbers.

Learn 2 — How can you find the greatest common factor (G.C.F) for two numbers ?

How can you find the greatest common factor of 18 and 24 (G.C.F) ?

You can find the greatest common factor in two ways :

First way using listing method :

You studied this method in primary 4

1 Find the factors of each number

18		24	
①	18	①	24
②	9	②	12
③	⑥	③	8
		4	⑥

Remember
- A common factor of two numbers is a factor of each of these numbers.
- The greatest common factor (G.C.F) of two numbers is the greatest number that is a factor of both.

2 Determine the common factors of these numbers

- **Factors of 18 :** 1 , 2 , 3 , 6 , 9 , 18
- **Factors of 24 :** 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24
- **Common factors :** 1 , 2 , 3 , 6

3 Get the greatest factor of the common factors.

- **The greatest common factor (G.C.F) : 6**

Second way using prime factorization :

1 Factorize each number to its prime factors.

18 → 3 , 6 → 2 , 3

24 → 4 , 6 → 2 , 2 , 2 , 3
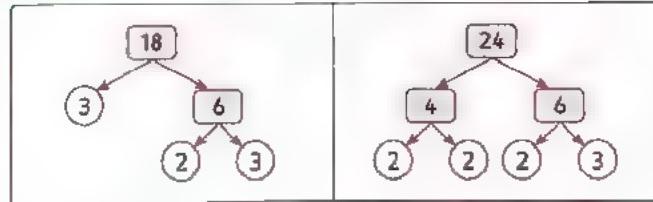
2 Find the common prime factors.

3 Find the product of these common prime factors.

$18 = 2 \times 3 \times 3$

$24 = 2 \times 3 \quad \times 2 \times 2$

$G.C.F = 2 \times 3 = 6$

Note

If there are no common prime factors, the G.C.F is 1

For Example :
① G.C.F of 3 and 17 is 1
② G.C.F of 8 and 9 is 1

- In primary 4, your child found common factors and explored the concept of greatest common factor (G.C.F). This lesson provides more practice with factor trees and the opportunity to explore how to find the G.C.F as well as other factors from the prime factorization

Example 3

Find the factors of 48 and 36, then find.

a. The common factors.

b. The greatest common factor (G.C.F)

Solution 💡

48	36
1 2 3 4 6 8 12 16 24 48	1 2 3 4 6 6 9 12 18 36

- Factors of 48 1 , 2 , 3 , 4 , 6 , 8 , 12 , 16 , 24 , 48
- Factors of 36 : 1 , 2 , 3 , 4 , 6 , 9 , 12 , 18 , 36

a. The common factors are : 1 , 2 , 3 , 4 , 6 and 12

b. G.C.F = 12

Example 4

Factorize 60 and 45 to their prime factors, then find the G.C.F

Solution 💡
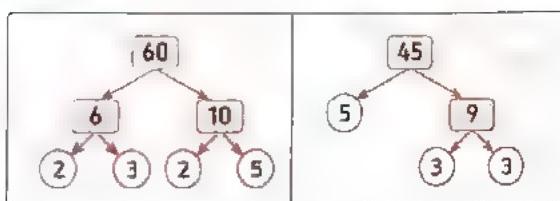
$$60 = 2 \times 2 \times 3 \times 5$$

$$45 = 3 \times 5 \times 3$$

$$G.C.F = 3 \times 5 = 15$$

✅ Check your understanding

Find the G.C.F of 36 and 54

Notes for parents :
- Your child may still prefer to make lists to find the common factors and the greatest common factor, but understanding the prime factorization is important as your child moves into more complex factors.

104

Prime factorization

1. Complete with "Prime" or "Composite".

a. 2 is ——— | b. 4 is ——— | c. 29 is ——— | d. 3 is ———

e. 5 is ——— | f. 6 is ——— | g. 7 is ——— | h. 11 is ———

i. 13 is ——— | j. 12 is ——— | k. 16 is ——— | l. 23 is ———

2. Factorize to prime factors.

a.
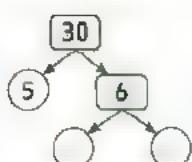
30 = ___ × ___ × ___

b. 📖
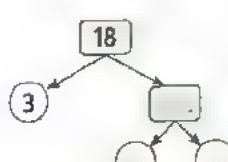
18 = 3 × ___ × ___

c. 📖

20 = 2 × ___ × ___

d.

48 = ___ × ___ × ___ × ___ × ___

e.

56 = ___ × ___ × ___ × ___

f.

36 = ___ × ___ × ___ × ___

105
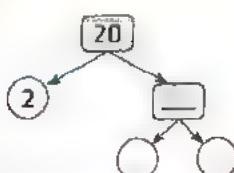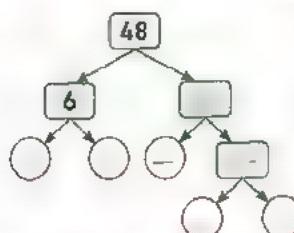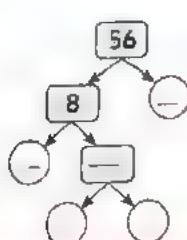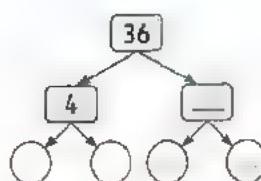
3. **Factorize each of the following numbers to its prime factors.**

a. 8	b. 15	c. 21	d. 32
e. 75	f. 42	g. 49	h. 72
i. 80	j. 90	k. 99	l. 17

4. **Find the product of the prime factorization listed, then list all other factors of the product.**

a. $2 \times 2 \times 2 =$ ———

Other factors are : ———

b. $2 \times 2 \times 5 =$ ———

Other factors are : ———

c. $2 \times 3 \times 3 =$ ———

Other factors are : ———

d. $2 \times 5 \times 5 =$ ———

Other factors are : ———

e. $2 \times 3 \times 7 =$ ———

Other factors are : ———

f. $2 \times 2 \times 2 \times 7 =$ ———

Other factors are : ———

g. $2 \times 2 \times 3 \times 3 =$ ———

Other factors are : ———

h. $3 \times 3 \times 7 =$ ———

Other factors are : ———

5. **Complete.**

a. ——— is the only even prime number.

b. The prime number has two factors which are ——— and ———

c. 1 is not a prime number because ———

d. The 2-digit prime number which is less than 13 is ———

e. The prime numbers between 60 and 70 are ———

f. The prime factors of 14 are ———

g. The prime factor of 19 is ———

h. The prime factors of 60 without repetition are ———

i. The number whose all prime factors are 2 , 3 and 5 is ———

j. The greatest factor of the number 72 is ———

k. The greatest prime factor of the number 28 is ———

l. The smallest factor of the number 21 is ———

m. The smallest prime factor of the number 42 is ———

6. 📖 At the northern edge of the Gulf of Suez lies the Suez Canal. The Suez Canal extends 193
kilometers and cuts thousands of miles from the shipping routes between Europe and Asia.

   1. It takes 12 to 16 hours for a ship to go through the canal. Akram was curious. If a ship
   takes 12 hr. and travels 193 kilometers, can it go an equal distance each hour? To solve
   the problem, he needs to know if 12 is a factor of 193. He makes a factor tree starting
   with 1 and 193. Basem told him the factor tree would not help him answer his question.
   Is Basem correct or incorrect? Why?

   2. Is 193 prime or composite?

   3. Is 12 a factor of 193? How do you know?

   4. Is 1 prime or composite or neither? Why?

Greatest common factor [G.C.F]

7. Find the common factors and the greatest common factor (G.C.F) of :

   a. 4 and 6

   Factors of 4: —————————————————

   Factors of 6: —————————————————

   Common factors : ———————————— G.C.F : ————

   b. 10 and 30

   Factors of 10 : —————————————————

   Factors of 30 : —————————————————

   Common factors : —————————— G.C.F : ————————

   c. 40 and 45

   Factors of 40 : —————————————————

   Factors of 45 : —————————————————

   Common factors : —————————— G.C.F : ————————

107

d. 54 and 18

Factors of 54 : —————————————

Factors of 18 : —————————————

Common factors : ———————— G.C.F : ——————

e. 48 and 60

Factors of 48 : —————————————

Factors of 60 : —————————————

Common factors : ———————— G.C.F : ——————

8. Find the prime factorization, then find the G.C.F

a.
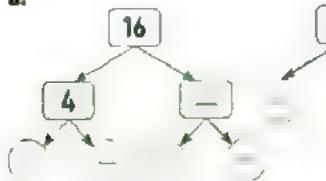
16 = ——————————

12 = ——————————

G.C.F = ——————————

b.
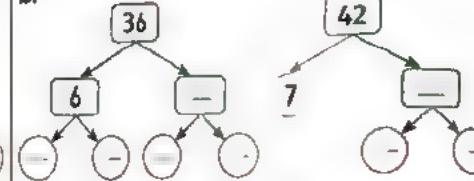
36 = ——————————

42 = ——————————

G.C.F = ——————————

c.

40 = ——————————

48 = ——————————

G.C.F = ——————————

d.

45 = ——————————

63 = ——————————

G.C.F = ——————————

108
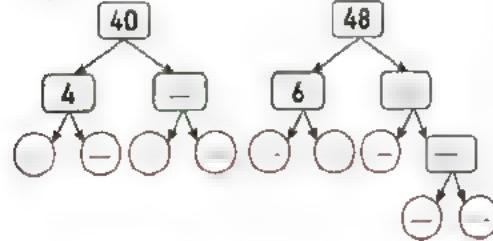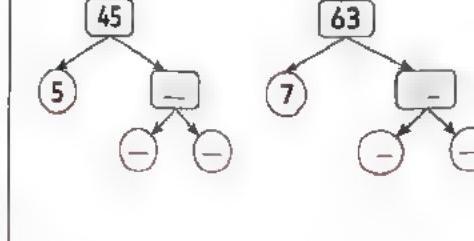
9. Factorize the following numbers to their prime factors, then find the G.C.F for them.
   a. 45 and 27

   b. 36 and 84

   c. 42 and 28   [Aswan – Kom Ombo 23]

   d. 39 and 78

   e. 35 and 28   [El Katyoubia 23]

10. Find the G.C.F of the given numbers.
    a. 8 and 12   [Cairo – El Sherouk 23]

    b. 12 and 18   [Cairo – Heliopolis 23]

    c. 40 and 50

    d. 10 and 45

    e. 8 and 24   [El Menia – Deir Mawas 23]

    f. 45 and 81

    g. 33 and 11

11. Two numbers, the prime factors of the first are 3 , 3 and 5 and the prime factors of the second are 2 , 2 , 3 and 5 , then :
    • The first number = ———
    • The second number = ———
    • Their G.C.F =

109

12. Greatest common factors (G.C.F) : Work independently to complete the prob.ems.

   1. List the factors of 42

   2. Complete the factor tree for 42 and write out the prime factorization

<p style="text-align:center">42</p>

<p style="text-align:center">2</p>

   3. Find the value of n : n = 2 × 2 × 7

   4. What are the common factors of 42 and n ?

   5. What is the greatest common factor of 42 and n ?

---

13. **a.** Shadi and Taha went diving to the steamship. They each stopped at intervals of equa. depths to check their gear. Shadi dove to the stern at 30 meters below the surface. What are all the options of intervals he could take ? (Stopping every 1 m is not practical, nor is going the entire distance.)

   A. 2 m , 3 m , 5 m

   B. 2 m , 3 m , 5 m , 6 m

   C. 2 m , 3 m , 5 m , 6 m , 10 m , 15 m

   D. 2 m , 3 m , 5 m , 6 m , 10 m , 12 m

   b. Taha dove to the hull at a depth of 15 meters. What are the options of intervals he could take ? (Stopping every 1 m is not practical, nor is going the entire distance.)

   A. 3 m , 5 m   B. 2 m , 3 m , 5 m

   C. 2 m , 3 m , 5 m , 6 m   D. 2 m , 3 m , 5 m , 6 m , 10 m

   c. **Challenge** : If both divers stop at equivalent equal intervals, what is the greatest distance they can both dive before stopping ?

   A. 2 m   B. 3 m

   C. 5 m   D. 10 m

14. Use what you know about factors and common factors to solve each problem.

a. Sylvia has 21 pencils and 14 erasers. She wants to put them in groups. What is the greatest number of groups that can be made so that each group has the same number of items? How many pencils will be in each group? How many erasers will be in each group?

_____   _____   _____

_____   _____

b. There are 40 girls and 32 boys who want to participate in lap on teams. f each team must have the same number of girls and the same number of boys, what is the greatest number of teams that can participate? How many girls will be in each team? How many boys will be in each team?

_____

_____

Challenge

15. Find the common factors of 36, 24 and 48

_____   _____

16. Find the G.C.F of 24, 40 and 56

_____

Choose the correct answer.

1. The prime number has _____ factors.

A. 1   B. 2   C. 3   D. 4

[Aswan - Kom ombo 23]

2. The smallest prime number is _____

A. 0   B. 1

C. 2   D. 3

3. The smallest odd prime number is

A. 1   B. 2

C. 3   D. 9

4. _____ is the only even prime number.

A. 0   B. 1   C. 2   D. 3

[Cairo - El Marg 23]

5. The number 11 has _____ factors.

A. 1   B. 2   C. 3   D. 4

[Monofia – Tala 23] , [Giza – Awseem 23]

6. The prime number between 44 and 50 is _____

A. 45   B. 46   C. 47   D. 49

7. 2 , 5 and 7 are prime factors of _____

A. 25   B. 35   C. 65   D. 70

8. 3 , 2 and 7 are prime factors of _____

A. 14   B. 21   C. 42   D. 44

9. The prime factors of the number 18 are _____

A. 2 , 2 and 3   B. 2 , 3 and 3

C. 6 and 2   D. 4 and 3

[El Menia – Deir Mawas 23 , Cairo – El Sherouk 23]

10. The prime factors of the number 28 are _____

A. 2 , 2 and 5   B. 2 , 2 and 7

C. 14 and 2   D. 7 and 4

[Cairo – El Marg 23]

11. Which of the following is a prime number?

A. 1   B. 3   C. 9   D. 15

12. Which of the following is a composite number?

A. 1   B. 31   C. 33   D. 43

13. Which of the following is NOT a prime number?

A. 2   B. 5   C. 7   D. 9

14. All the following numbers are composite except _____

A. 66   B. 67   C. 68   D. 69

15. Which statement is true ?

A. 1 is a factor of only odd numbers.

B. 1 is not a factor of any number.

C. 1 is a factor of every number.

D. 1 is a factor of only 0.

112

16. 📖 What is the best explanation for the difference between prime and composite numbers ?

♣
  A. A prime number has only 2 factors : 1 and itself. A composite number has more than two factors.

  B. A prime number has only 1 as a factor and a composite number has two factors.

  C. A prime number has only 2 factors. A composite number has 4 or more factors.

  D. A prime number can be factored in more than one way. A composite number can be factored in only one way.

---

17. The G.C.F of 7 and 56 is ———

  A. 1   **B.** 56

  C. 7   **D.** 14

18. The G.C.F of 10 and 15 is ———

  A. 10   **B.** 15   **C.** 5   **D.** 30

                    [Monofia – Tala 23]

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19. G.C.F of numbers 5 and 7 is ———

  A. 12   **B.** 35   **C.** 1   **D.** 0

      [Monofia – Shiben El Kom 23]

20. The G.C.F of 20 and 30 is ———

  A. 1   **B.** 4   **C.** 5   **D.** 10

   [Cairo – El Nouzha, El Beheira 23]

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21. The common factor of all numbers is ———

  A. 0   **B.** 1   **C.** 2   **D.** 3

   [Ismailia 23 , Alexandria - West 23]

22. 1 and 7 are the common factors of ———

  A. 2 and 7   **B.** 2 and 14

  C. 7 and 12   **D.** 7 and 14

---

23. Which pair of numbers has the same greatest common factor as 42 and 12 ?

  A. 9 and 6   **B.** 8 and 24   **C.** 16 and 60   **D.** 18 and 30

---

24. 📖 Two groups took public transportation in Sharm El-Sheikh. Each ticket costs the same

∴ amount of money. One group spends 16 L.E. and the other group spends 12 L.E. At most, how much does the greatest possible cost of each ticket ? [Hint · Use the G.C.F].

  A. 2 L.E.   **B.** 4 L.E.   **C.** 6 L.E.   **D.** 8 L.E.

                                   [Monofia – Tala 23]

113

▸ **Identifying Multiples**
▪ **Least Common Multiple (L.C.M)**

Learn ① Identifying multiples

- In primary 4, you have learned what is a multiple and how to find multiples of a whole number and common multiples of two numbers.

- In this lesson, you will review what you have learned before, and expand your knowledge of common multiples to learn how to identify the least common multiple (L.C.M).

Remember what is a multiple ?

A multiple is the product of a given number and another whole number.

- You can find multiples of any number using many ways as :

① Multiplying by the whole numbers.

② Skip-counting on the number line.

For Example .

To find the multiples of 2, you can use any of these ways :

① Multiply by 0 , 1 , 2 , 3 , 4 and so on.

$2 \times 0 = 0$, $2 \times 1 = 2$, $2 \times 2 = 4$, $2 \times 3 - 6$, $2 \times 4 = 8$, and so on.

Then the products 0 , 2 , 4 , 6 , 8 ,... are called the multiples of 2

② Using skip-counting by 2s on the number line.
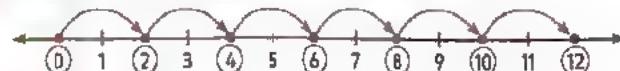
Then the multiples of 2 are 0 , 2 , 4 , 6 , 8 , 10 , 12 and so on.

Remarks

- Zero is a multiple for any number.
- The multiple of any number not equal to 0 is divisible by this number.

For Example :

$2 \times 5 = 10$ ⟶ 10 is a multiple of both 2 and 5

- 10 is divisible by 2   • 10 is divisible by 5

Notes for parents :

- Skip counting on the number chart helps your child notice the patterns to help him/her find the multiples more quickly.

9×2

8×2

7×2

6×2

5×2

4×2

3×2

2×2

1×2

114

Remember common multiples :

- **Common multiples** are multiples of two or more numbers.

  i.e. They are multiples that the numbers have in common.

Finding common multiples using the number line :

Example : Use a number line to find common multiples of 2 and 3.

The common multiples of 2 and 3 are
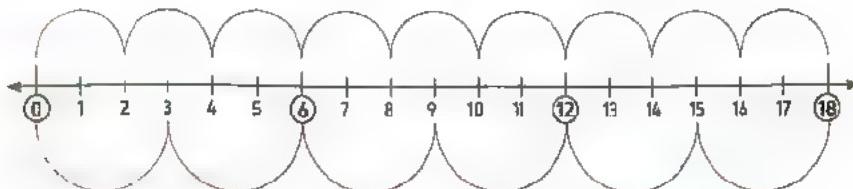
0 , 6 , 12 , 18 ,... and so on.

Remark

Zero is a common multiple for any numbers.

Example **1**

Find the multiples of each of the numbers 4 and 6 up to 50, then find the common multiples between them.

Solution 💡

- The multiples of 4 are : 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28 , 32 , 36 , 40 , 44 and 48
- The multiples of 6 are : 0 , 6 , 12 , 18 , 24 , 30 , 36 , 42 and 48
- The common multiples of 4 and 6 are : 0 , 12 , 24 , 36 and 48

✅ **Check** your understanding

Find the multiples of each of 7 and 3 up to 50, then find the common multiples between them.

Solution 💡

The multiples of 7 are . _____

The multiples of 3 are : _____

The common multiples are : _____

- Listing multiples help your child find common multiples.

115

Learn ② Least common multiple (L.C.M)

Least Common Multiple (L.C.M)

The least common multiple (L.C.M) is the smallest multiple (other than 0)
that two or more numbers have in common.

To find the L.C.M of two numbers or more, you can use one of the following two methods :

① Find the
multiples
of each number.

② Find the common
multiples of
these numbers.

③ Find the smallest multiple
(other than zero) of them.
Then it will be the L.C.M

For Example

To find L.C.M for 6 and 9 :

① • Multiples of 6 are : ⓪ , 6 , 12 , ⑱ , 24 , 30 , ㊱ , 42 , 48 , ㊴ ,...

    • Multiples of 9 are : ⓪ , 9 , ⑱ , 27 , ㊱ , 45 , ㊴ ,...

② Common multiples of 6 and 9 (other than zero) are · 18 , 36 , 54 ,...

③ L.C.M of 6 and 9 is 18

L.C.M by prime factorization

① Find all the prime
factors of each
of the given
numbers.

② Array prime factorization
of each number such that
the similar factors lie on
the same column.

③ Take a factor from
each column, then
find their product
which is the L.C.M

For Example :

To find L.C.M for 18 and 24 :

①

18 → 2 , 9
9 → 3 , 3

24 → 4 , 6
4 → 2 , 2
6 → 2 , 3

②
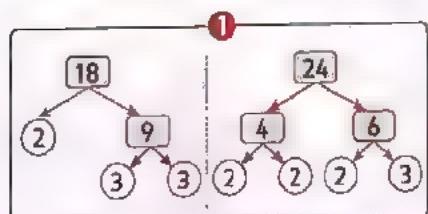
$18 = 2 \times 3 \times 3$

$24 = 2 \times 3 \times 2 \times 2$

$L.C.M = 2 \times 3 \times 3 \times 2 \times 2$

③

$L.C.M = 72$

Notes for parents :

• Ask your child what is the meaning of the least common multiple.

Example 2

Find the least common multiple (L.C.M) for each of the following.

a. 8 and 6   b. 12 and 16   c. 4 , 12 and 8

Solution 🔋

a. 8 $= \boxed{2} \times 2 \times 2$

6   $- \boxed{2}$ $\times 3$

L.C.M $= 2 \times 2 \times 2 \times 3 = 24$
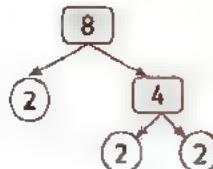
b. 12 $= \boxed{2} \times \boxed{2} \times 3$

16 $= \boxed{2} \times \boxed{2}$ $\times 2 \times 2$

L.C.M $= 2 \times 2 \times 3 \times 2 \times 2 = 48$
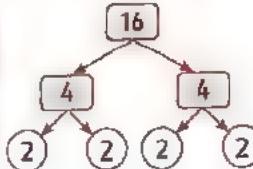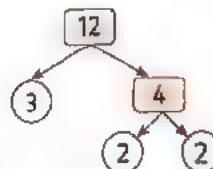
c. 4 $= \boxed{2} \times \boxed{2}$

12 $- \boxed{2} \times \boxed{2} \times 3$

8   $= \boxed{2} \times \boxed{2}$ $\times 2$

L.C.M $= 2 \times 2 \times 3 \times 2 = 24$
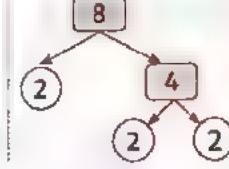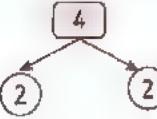
Notice

The L.C.M for two or more prime numbers is the product of these numbers.

For Example :

• L.C.M for 5 and 7 is $5 \times 7 = 35$

• L.C.M for 2 , 3 and 5 is $2 \times 3 \times 5 = 30$

• Let your child notice that prime factorization is the simplest way to find L.C.M of three numbers.

✓ Check your understanding

1. **Complete.**

   a. 6 and 5
   - Multiples of 6 are : _____
   - Multiples of 5 are . _____
   - L.C.M = _____

   b. 10 and 12
   - Multiples of 10 are : _____
   - Multiples of 12 are : _____
   - L.C.M = _____

2. **Using prime factorization, find L.C.M for each of the following.**

   a. 16 and 24 _____

   b. 9 and 12 _____

Helpful Hints

1. The multiples of 2 are the numbers whose ones digit is 0, 2, 4, 6 or 8
2. The multiples of 5 are the numbers whose ones digit is 0 or 5
3. The multiples of 10 are the numbers whose ones digit is 0
4. Zero is a multiple of any number.
5. Any number is a multiple of itself.
6. The product of two whole numbers (or more) is a multiple of each of these numbers.

   For Example : 35 is the product of 5 and 7 $(5 \times 7 = 35)$,

   so 35 is a multiple of 5 and also 35 is a multiple of 7

7. The common multiples of two prime numbers are multiples of their product.

   For Example . • All common multiples of 2 and 3 are multiples of 6

   • All common multiples of 3 and 5 are multiples of 15

Notes for parents :
• Direct your child to solve "check your understanding" problems. Review his/her answer.

Multiples and common multiples

1. Complete the following.

a. List the first five multiples of 3 —————————————————

b. List the first four multiples of 5 —————————————————

c. ▣ List the first five multiples of 6 —————————————————

d. ▣ List the first six multiples of 7 —————————————————

e. List the first five multiples of 9 —————————————————

f. ▣ List eight multiples of 10 —————————————————

g. List the multiples of 8 up to 60 —————————————————

h. List the multiples of 4 which lie between 15 and 40 ——————————

i. All the multiples of 5 between 14 and 44 are ——————————

j. All the multiples of 2 that are less than 10 are ——————————

2. Complete.

a. $28 = 7 \times$ ———— hence 28 is a multiple of
   and is also a multiple of ————

b. $42 = 6 \times$ ———— hence 42 is a multiple of
   and is also a multiple of ————

c. $60 = 10 \times$ ———— hence 60 is a multiple of ————
   and is also a multiple of ————

d. The number 12 is a multiple of 3 because : ———— = ———— × ————

e. The number 21 is a multiple of 7 because : ———— = ———— × ————

f. The number ———— is a multiple of 5 because : $40 = 5 \times$ ————

g. The number ———— is a multiple of 10 because : $150 = $ ———— $\times 15$

3. a. Find the multiples of each of the numbers 2 and 3 up to 20, then find the common
   multiples between them.

The multiples of 2 are : —————————————————

The multiples of 3 are : —————————————————

The common multiples are : —————————————————

119

b. Find the multiples of each of the numbers 5 and 4 up to 30, then find the common multiples between them.

The multiples of 5 are : _____

The multiples of 4 are : _____

The common multiples are : _____

4. 📖 **Answer the following.**

• List the first five multiples of 5 _____

• List the first ten multiples of 2 _____

• What common multiples of 2 and 5 did you list? _____

5. 📖 **Answer the following.**

• List the first five multiples of 8 _____

• List the first six multiples of 4 _____

• List the first five multiples of 6 _____

• What common multiples of 8, 4 and 6 did you list? _____

6. 📖 **Answer the following.**

• List the first twelve multiples of 3 _____

• List the first twelve multiples of 4 _____

• What common multiples of 3 and 4 did you list? _____

• Use this information to fill in the Venn Diagram for the first 12 multiples of 3 and 4, placing the common multiples in the shared center.

Multiples of 3   Multiples of 4
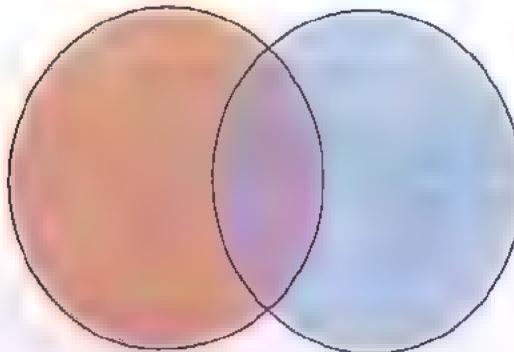
7. a. Find a common multiple of 4 and 8 _____

b. Find a common multiple of 5 and 4 _____

c. Find two common multiples of 4 and 6 _____

d. Find two common multiples of 3 and 9 _____

8. Write the common multiples of.

a. 3 and 5 which are less than 50 _____

b. 2 and 3 which are less than 30 _____

c. 2 and 5 which are between 20 and 75 _____

9. Complete.

a. The common factor of all the whole numbers is ____

b. The common multiple of all the whole numbers is ____

c. If the common factor of two numbers s 12 , then these two numbers may be ____ and _____

d If the common multiple of two numbers is 28 , then these two numbers may be ____ and _____

10. a. 📖 Select the three numbers that are NOT common multiples of 5 and 7.

A. 14	B. 21	C. 35
D. 55	E. 70	F. 105

b. 💻 Select the three numbers for which 24 and 32 are common multiples.

A. 2	B. 3	C. 4
D. 6	E. 7	F. 8

11. 📖 • Adel is buying cartons of eggs and bottles of juice at the supermarket to make breakfast for friends. Each carton contains 12 eggs. Complete the chart for Adel.

Cartons	1	2	3	4	5	6
Eggs	12					

121

- The juice comes in packs of 9. Complete the chart for Adel

Packs	1	2	3	4	5	6
Juice	9					

- If Adel is buying enough eggs and juice for 36 people, how many cartons of eggs and packs of juice will he need to buy for each guest to have 1 egg and 1 juice ?

12. - • Omar wants to visit Ras Abu Galum. During the week, a bus leaves for Ras Abu Galum at 3 a.m. Additional buses leave every 3 hours. The last bus leaves at 12 p.m. What times can Omar catch the bus ?

3:00 a.m. 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00 p.m. 1:00

- On the weekend, the first bus leaves for Ras Abu Galum at 6 a.m. Additional buses leave every 2 hours until 12 p.m. What times can Omar catch the weekend bus ?

6:00 a.m. 7:00 8:00 9:00 10:00 11:00 12:00 p.m.

- What times can Omar always catch a bus, whether it is a weekday or the weekend ?

13. a. Doha and her little brother are laying out train tracks. Each train track is 12 centimeters long. How long are the first 5 pieces of track laid end to end ?

b. How many pieces of track would Doha and her brother need to make the same distance from the previous problem if the track pieces were 4 centimeters long ?

Least common multiple (L.C.M)

14. a. To find the L.C.M of 6 and 9:
- Multiples of 6 : _____
- Multiples of 9 : _____
- Common multiples of 6 and 9 (other than 0) : _____
- (L.C.M) of 6 and 9 is : _____

122

b. 📖 To find the L.C.M of 10 and 5 :
  - Multiples of 10 : ————————————— ————————————————————
  - Multiples of 5 : ———————————————————— ——————
  - Common multiples of 10 and 5 (other than 0) :
  - (L.C.M) of 10 and 5 is : —

c. To find the L.C.M of 7 and 14 :
  - Multiples of 7 : —————————————————————————————————
  - Multiples of 14 : ——————————————————————————
  - Common multiples of 7 and 14 (other than 0) : ——————————
  - (L.C.M) of 7 and 14 s : —————————————————

d. 📖 To find the L.C.M of 5 and 11 :
  - Multiples of 5 : ——————————————————————
  - Multiples of 11 : ————————————————————
  - Common multiples of 5 and 11 (other than 0) : —————————————
  - (L.C.M) of 5 and 11 is : ——————————————————

e. 📖 To find the L.C.M of 3 and 8 :
  - Multiples of 3 : ——————————————————————————
  - Multiples of 8 : ——————————————————————
  - Common multiples of 3 and 8 (other than 0) : ——————————
  - (L.C.M) of 3 and 8 is : ——————————————————————

f. To find the L.C.M of 6 , 10 and 15 :
  - Multiples of 6 : —————————————————————
  - Multiples of 10 : ————————————————————————
  - Multiples of 15 : ——————————————————————————
  - Common multiples of 6 , 10 and 15 (other than 0) : ——————
  - (L.C.M) of 6 , 10 and 15 is : ———————————————————

15. Find the least common multiple.

  a. 24 and 36
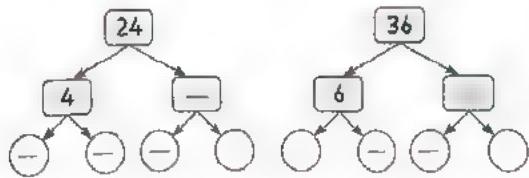
  24 = —— × —— × ——— × ——

  36 = ——————————————

  L.C.M = ———————————

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b. 15 and 18

15 = _____

18 = _____

L.C.M = _____

15 → ◢ ◣

18 → ◢ ◣

c. 32 and 48

32 = _____

48 = _____

L.C.M = _____

32 → ◢ ◣

48 → ◢ ◣

d. 6 , 9 and 8

6 = _____

9 = _____

8 = _____

L.C.M = _____

6 → ◢ ◣

9 → ◢ ◣

8 → ◢ ◣

e. 12 , 9 and 18

12 = _____

9 = _____

18 = _____

L.C.M = _____

12 → ◢ ◣

9 → ◢ ◣

18 → ◢ ◣

16. For each group of the following numbers, use the prime factorization of each number to find the L.C.M :

a. 3 and 5

b. 6 and 14

c. 16 and 22

d. 8 and 12

[El Behelra , Cairo – El Sherouk 23]

e. 10 and 12

[El Kalyoubia – Monshaet El Qunater 23]

f. 18 and 30

[Cairo – Al Khalifa and Al Mokattam 23]

17. ▢ Use the given vocabulary to complete the following.

[prime – factor – the number one – composite number – product – multiples]

a. A _____ is a number with more than one set of factor pairs.

b. A _____ Is a number multiplied by another number to find a product.

c. Skip counting is a way to find _____ of a number.

d. _____ is a factor of all numbers.

e. A _____ number's only factor pair is one and itself.

f. A _____ is the answer to a multiplication problem.

18. ▢ Badr Is buying kofta and aish baladi for his birthday party. The kofta is sold in packages of 3. The bakery sells the aish ba.adi in packages of 12. Badr wants to have exactly the same number of each. **What is the minimum number of kofta and aish baladi he should buy ?**

Package	1					
Kofta	3					

Package	1					
Aish Baladi	12					

19. ▢ Hend and Jana are biking around a small lake. Hend makes a complete lap around the lake in 6 minutes. It takes her younger sister, Jana, 8 minutes to finish one lap. If Hend and Jana continue to bike around the lake at the same rate, **how many minutes will it take for them to come together at the starting point again ?**

Lap	1					
Hend	6					

Lap	1					
Jana	8					

125

Choose the correct answer.

1. 10 is a multiple of

    A. 3   B. 4

    C. 5   D. 6

[Alexandria – First Montaza 23]

2. ———— is a multiple of 5.

    A. 6   B. 9

    C. 37   D. 20

[Aswan 23]

3. Which of the following is a multiple of 9 ?

    A. 3   B. 45

    C. 56   D. 89

4. Which is NOT a multiple of 6 ?

    A. 0   B. 30

    C. 20   D. 42

5. Which of the following is NOT a multiple of 10 ?

    A. 10   B. 20

    C. 35   D. 50

6. Which is a common multiple of 5 and 8 ?

    A. 20   B. 40

    C. 35   D. 45

7. Which is NOT a common multiple of 9 and 6 ?

    A. 18   B. 54

    C. 36   D. 42

8. The multiple of any number is ——

    A. 0   B. 1

    C. 2   D. 3

[Ismailia 23]

9. The common multiples of 6 and 8 are the same as the multiples of which number ?

    A. 10   B. 12

    C. 20   D. 24

10. The L.C.M of 6 and 10 is ——

    A. 60   B. 30

    C. 15   D. 45

[Giza – Awseem 23 , Monofia – Tala 23]

11. The L.C.M of 5 and 10 is ——

    A. 5   B. 10

    C. 15   D. 20

[Aswan – Kom Ombo 23]

12. What is the L.C.M of 8 and 18 ?

    A. 8   B. 18

    C. 24   D. 72

13. The L.C.M of 8 , 2 and 6 is ——

    A. 48   B. 45

    C. 80   D. 24

14. The L.C.M of 5 and 3 is ——

    A. 20   B. 25

    C. 35   D. 15

[Monofia – Ashmoon 23]

▶ **Factors or Multiples ?**

Learn ① **Relation between factors and multiples**

Father, mother and three sons take the
bus whose ticket is
7 L.E. per one.
What is the total cost of the family ?

• To find the total cost multiply 7×5

$$7 \quad \times \quad 5 \quad = \quad 35 \text{ L.E.}$$

Factor of 35	Factor of 35	Multiple for each of 7 and 5

Remarks

• The factors of 35 are 1 , 5 , 7 and 35
• 35 is a multiple of each of 1 , 5 , 7 and 35

Factors rainbow
35

1 5   7 35

Factors of
① ⑤ ⑦ ㉟   35
Multiple of
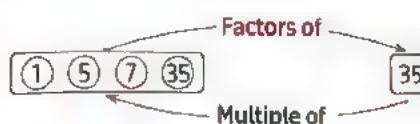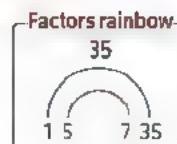
Factor	**Multiple**
• One is a factor of all numbers.	• Zero is a multiple of all numbers.
• Each number except zero has a finite number of factors.	• Each number except zero has an infinite number of multiples.
• Any number is divisible by each of its factors.	• Multiple is the product of two factors or more.
• Factor of a number is smaller than or equal to this number.	• Non-zero multiple of a number is greater than or equal to this number.

Notes for parents :

• Ask your child to explain the difference between a factor and a multiple.

127

Relation between G.C.F and L.C.M:

| G.C.F |
| Greatest common factor |

| L.C.M |
| Least common multiple |

| Deals with factors |

| Dea.s with multiples |

| Obtained by finding the greatest factor among the common factors of the numbers |

| Obtained by finding the smallest multiple among the common multiples of the numbers |

$$G.C.F \times L.C.M = \text{Product of the given two numbers}$$

of two numbers   of two numbers

Example 1

Find G.C.F and L.C.M for 9 and 24

Solution

9   = 3×3

24 = $3 \times 2 \times 2 \times 2$
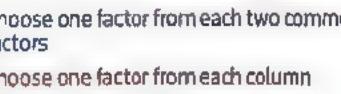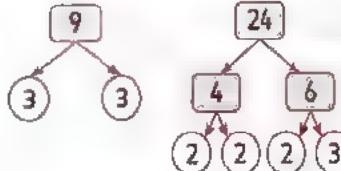
G.C.F= 3 ————— Choose one factor from each two common factors

L.C.M= $3 \times 3 \times 2 \times 2 \times 2$ Choose one factor from each column

G.C.F= 3, L.C.M = $3 \times 3 \times 2 \times 2 \times 2 = 72$

Notice

$$\begin{array}{r} 2\,4 \\ \times\quad 9 \\ \hline 2\,1\,6 \end{array} \qquad \begin{array}{r} 7\,2 \\ \times\quad 3 \\ \hline 2\,1\,6 \end{array}$$

i.e. G.C.F × L.C.M

= Product of the two

   numbers

✓ Check your understanding

Find G.C.F and L.C.M for each of the following.

a. 6 and 16

b. 14 and 21

Notes for parents :

• Ask your child to explain the difference between G.C.F and L.C.M

128

Learn ② G.C.F or L.C.M ... ?

To solve some story problems, you need to decide whether you have to find the G.C.F or L.C.M

What kinds of story problems might involve finding G.C.F?

These problems usually involve dividing, distributing equally, cutting into pieces or breaking something into groups.

What kinds of story problems might involve finding L.C.M ?

These problems usually involve something repeated, multiple items, or when two things occur at the same time.

Example 2

The dimensions of a room are 12 and 8 meters. A contractor wants to tile the room using the least number of squared tiles. **What should the tile dimension be ?**

Solution

You will divide the room area into some squares, the least number of tiles is asked which means the dimensions of the tile must be the greatest possible that means you will find G.C.F of 12 and 8

$$12 = \boxed{2} \times \boxed{2} \times 3$$
$$8 = \boxed{2} \times \boxed{2} \quad \times 2$$
$$\overline{G.C.F = 2 \times 2 = 4}$$
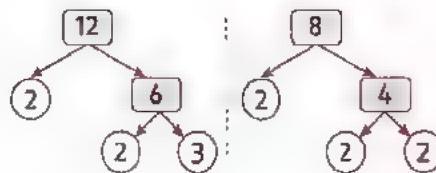
, then the tile has to be a square of side length 4 meters.

Example 3

Two neon signs are turned on at the same time. Both signs blink as they are turned on.
One sign blinks every 9 seconds. The other sign blinks every 15 seconds. **In how many seconds will they blink together again?**

• Ask your child when he/she decides to find G.C.F and L.C.M through the story problems.

129

Solution 👽

To find when the two signs blink together again at the same time, you have to find L.C.M

of 9 and 15

$$
\begin{array}{l}
9 \quad = 3 \times 3 \\
15 \ = 3 \qquad \times 5 \\
\hline
L.C.M = 3 \times 3 \times 5 = 45
\end{array}
$$

, then the two signs will blink together again in 45 seconds.

✅ **Check** **your understanding**

1. Farmer John and Farmer Jane are planning out their fruit orchard. Farmer John is planting the orange trees, and Farmer Jane is planting the cherry trees. Farmer John has 30 orange trees to plant, and Farmer Jane has 24 cherry trees to plant. They want to plant the trees so that each row has the same number of trees. What is the largest number of trees each row can have ?

   _____

   _____

   _____

2. Two types of cubic stone blocks, one is of edge length 2 meters and the other is of edge length 3 meters. It is wanted to make a column from each type such that the two columns are of the same height using the least number of stones. What is the height of each column ?

   _____

   _____

   _____

130

1. Find the G.C.F and L.C.M for each of the following numbers.

   a. 12 and 16

   12 = —————————

   16 = —————————

   G.C.F = —————————

   L.C.M = —————————

   12 → 2, __
   16 → __, 4

   b. 18 and 20

   18 = —————————

   20 = —————————

   G.C F = —————————

   L.C.M — —————————

   c. 24 and 36

   24 = —————————

   36 = —————————

   G.C.F = —————————

   L.C.M = —————————

2. Find the G.C.F and L.C.M for each of the following.

   a. 📖 12 and 10   G.C.F = ————— [Giza 23]   L.C.M = —————
                                                 [El Menia – Deir Mawas 23]

   b. 📖 9 and 5   G.C.F = —————   L.C.M = —————

   c. 20 and 30   G.C.F = —————   L.C.M = —————

   d. 28 and 42   G.C.F = ————— [Aswan – Kom Ombo 23]   L.C.M = —————

   e. 📖 11 and 2   G.C.F = —————   L.C.M = —————

   f. 📖 8 and 4   G.C.F = —————   L.C.M = —————

   g. 📖 9 and 12   G.C.F = ————— [Giza – Awseem 23]   L.C.M = —————

   h. 18 , 30 and 45   G.C.F = —————   L.C.M = —————

131

3. Two numbers , the prime factors of the first are 3 , 3 and 5 and the prime factors of the second are 2 , 2 , 3 and 5 , then :

    a. The first number =   b. The second number = ————

    c. Their G.C.F = ————   d. Their L.C.M = ————

4. If $12 = 2 \times 2 \times 2 \times 3$

    , $30 = 2 \qquad \times 3 \times 5$

    Then G.C.F =

    L.C.M =   [El Monofia – Shiben El Kom 23]

5. Two numbers , one of them is 12 , their GCF is 2 and their LCM is 60. Find the other number.

6. 📱 Omnia has two strips of cloth. One is 35 centimeters wide , and the other is 75 cm. wide. She wants to cut both pieces into strips of equal width that are as wide as possible. How wide should she cut the strips ? Do you have to find the G.C.F or the L.C.M ? What is the answer?

7. 📱 Omar exercises every 12 days. Rana exercises every 8 days. Both friends exercised together today. How many days will it be until they exercise together again ? Do you have to find the G.C.F or the L.C M ? What is the answer?

8. 📖 Menna is giving her friends pencils and special erasers. The store sells pencils in boxes of 8 and erasers in boxes of 10. If Menna wants the same number of each , what is the minimum number of pencils that she will have to buy ? Do you have to find the G.C.F or the L.C.M ? What is the answer?

132

9. Nour is making snack bags for an upcoming trip. He has 6 oranges and 12 pieces of dried fruit. He wants the snack bags to be identical without any food left over. What is the greatest number of snack bags Nour can make ? Do you have to find the G.C.F or the L.C.M ? What is the answer ?

10. Malak baked 30 servings of cakes and 48 servings of baklava for her family. She wants to divide the desserts into containers so that each person receives the same number of servings. How many containers will she need ? Do you have to find the G.C.F or the L.C.M ? What is the answer ?

11. Ola sells baskets of figs that each hold 9. She also sells bags of pomegranates that each hold 7. If she sells the same number of each, what is the smallest quantity of each type of fruit that she sold ? Do you have to find the G.C.F or the L.C.M ? What is the answer ?

12. Marwa waters one of her plants every 4 days and another plant every 6 days. If she waters both plants today, when is the next time both plants will be watered on the same day ?

13. Sara has 16 red flowers and 24 yellow flowers. She wants to make bouquets with the same number of each color flower in each bouquet. What is the greatest number of bouquets she can make ?

Challenge

14. If the L.C.M of two numbers is 36 and their G.C.F is 3 , what could be these two numbers ?

133

TEST

1. Choose the correct answer.

1. If $k - 3.551 = 1.268$, then $k =$

   A. 2.283   B. 4.819   C. 3.514   D. 5.103

2. Which of the following equations represent the mathematic operation (6 plus a number equal 11) ?   [Cairo – El Salam 23]

   A. $8 - 11 = 6$ B. $B - 6 = 11$

   C. $6 + 11 = B$ D. $6 + B = 11$

3. Prime factorization of 12 is ———

   A. 1,2,3,4,6,12   B. $2 \times 2 \times 2 \times 3$

   C. $2 \times 2 \times 3$ D. $2 \times 3 \times 4$

4. Adel and Hany have 36 L.E. together, Adel only has 20 L.E., then the variable X in the equation $X + 20 = 36$ represents ———

   A. Adel's money.   B. Hany's and Adel's money.

   C. Hany's money.   D. the difference between Adel's and Hany's money.

5. Which pair of numbers has the same greatest common factor as 24 and 18 ?

   A. 12 and 24   B. 30 and 12   C. 36 and 18   D. 42 and 35

6. The number 13 has ——— factors.

   A. 3   B. 5   C. 2   D. 1

7. The least common multiple (L.C.M) for 12 and 6 is ———   [El Beheira 23]

   A. 12   B. 10   C. 6   D. 40

2. Complete the following.

1. Ramy carries 7.136 kg of apples and oranges where oranges weight is 3.816 kg, then the equation representing the mass of apples only is ———

2. The number whose prime factors are 2,2,3,5 is ———

3. If $4.563 + 2.45 = k + 3.265$, then $k =$ ———

4. G.C.F of any two different prime numbers is ———

5. The prime numbers between 10 and 20 are ———

6. The multiples of 4 which lie between 21 and 35 are

134

7. ———— is the only even prime number. [Cairo – El Nouzha 23]

8. From the opposite bar model

30.8	
a	19.5

, the value of a = ———— [Monofia – Tata 23]

3. Choose the correct answer:

1. The G.C.F of two numbers 3 and 9 is ———— [Cairo – El Zaiton 23]

   A. 2   B. 3   C. 6   D. 7

2. The value of the variable x in the equation $x - 3.5 = 4$ is [El Menia – Deir Mawas 23]

   A. 1.5   B. 7.5   C. 5.6   D. 5.1

3. The smallest prime number in the following is ———— [El Menia 23]

   A. 2   B. 3   C. 5   D. 0

4. The composite number n the following numbers is [El Menia – Deir Mawas 23]

   A. 23   B. 13   C. 21   D. 5

5. The number ———— is one of the multiples of the digit 5. [Cairo – El Sherok 23]

   A. 57   B. 206   C. 5001   D. 100

6. The prime factorization of 6 is - [Cairo – El Zouzha 23]

   A. 1×6 B. 2×3 C. $5 + 1$ D. $1, 6$

7. Which of the following is an expression ? [Cairo 23]

   A. $2.5 + X = 8$ B. $2.5 + 1.4 = 1.6 + 1.3$

   C. Ramy saved L.E. 18 per day   D. $x + 2.7 - 3.8$

4. Answer the following questions.

1. Find L.C.M and G.C.F for 15 and 6. [Ismailia 23]

2. A school has a case of 144 candy bars and a case of 24 sodas. If these are divided evenly among the students, how many students will get candy and soda ?
   How many candy bars and sodas will each student get ?

3. Find the value of x in the opposite area model.

x	
1.34	2.5

4. A mother has 1.352 kg. of flour. She wants to make a cake for her children. If the cake needs 2 kg. of flour, how many more flour does she need ?

135

UNIT 3

Multiplication with Whole Numbers

▶ **Concept 1:**
Multiplying by a 2-Digit Number

Did You Know?!

A baby dolphin is called a calf. A calf eats 4 times each hour during the first week of life. How many times does it eat in a day during this time?

Multiplying by a 2-Digit Number

Lesson No.	Lesson Name	Learning Objectives
Lessons 1 & 2	Using the Area Model to Multiply	• Students will multiply using the area model.
	The Distributive Property of Multiplication	• Students will explain the relationship between the area model of multiplication and the Distributive Property of Multiplication.
Lessons 3 & 4	Multiplying by a 2-Digit Number Using the Algorithm	• Students will multiply using the standard algorithm.
	Multiplying Multi-Digit Numbers	• Students will multiply 4-digit numbers by 2-digit numbers using the standard algorithm. • Students will use estimation to check the reasonableness of their answer.
Lesson 5	Multiplication Problems in the Real World	• Students will solve multistep story problems involving multiplication.

- **Using the Area Model to Multiply**
- **The Distributive Property of Multiplication**

Remember Multiplying by powers of 10

Maged saves 5 pounds per day.

Calculate the total savings after 100 days.

- You can use a **basic fact and a pattern** to find the product.

TH	H	T	O	
			5	$5 \times 1 = 5$
		5	0	$5 \times 10 = 50$ (Put 1 zero at the end)
	5	0	0	$5 \times 100 = 500$ (Put 2 zeroes at the end)
5 ,	0	0	0	$5 \times 1,000 = 5,000$ (Put 3 zeroes at the end)

Notice the pattern of zeroes.

So, Maged saved 500 pounds in 100 days.

Example 1

Fill in the blanks below.

a. $4 \times 100 = \boxed{}$

b. $20 \times 100 = \boxed{}$

c. $10,000 \times 7 = \boxed{}$

d. $8 \times 100,000 = \boxed{}$

e. $\boxed{} \times 13 = 1,300$

f. $1,000 \times \boxed{} = 60,000$

Solution 🔽

a. $\textcircled{4} \times 100 = 400$

b. $\textcircled{20} \times 100 = 2,000$

c. $10,000 \times \textcircled{7} = 70,000$

d. $\textcircled{8} \times 100,000 = 800,000$

e. 100

f. 60

Check your understanding

Complete each of the following.

a. $100 \times 6 = \boxed{}$

b. $80 \times 10 = \boxed{}$

c. $70 \times 10,000 = \boxed{}$

d. $\boxed{} \times 100 = 2,000$

e. $1,000 \times \boxed{} = 9,000$

f. $150 = \boxed{} \times 15$

Notes for parents :

- Explain that when multiplying by a power of ten the product has the same number of zeroes unless the basic fact has a zero.

Learn ① **Using the area model to multiply**

A toys factory produces 193 boxes of toys per day.
There are 24 toys in each box.
Calculate the total number of toys per day.

Multiply: 193×24

You can use the area model as follows:

Expand: $193 = 100 + 90 + 3$ and   Expand: $24 = 20 + 4$

193

	100	90	3
20	20×100 = 2,000	20×90 = 1,800	20×3 = 60
4	4×100 = 400	4×90 = 360	4×3 = 12

24

Add the products:

```
    2,000
+   1,800
+      60
+     400
+     360
+      12
-----------
   4,632
```

$193 \times 24 = 2,000 + 1,800 + 60 + 400 + 360 + 12 = 4,632$
So, the factory produces 4,632 toys per day.

> **Notice that**
> When adding the products, order of products does not affect the total answer.

Example **2**

Use the area model to solve the following.

a. 409×68 b. 17×54

Solution

a. • $409 = 400 + 9$ • $68 = 60 + 8$

	400	9
60	$60 \times 400 = 24,000$	$60 \times 9 = 540$
8	$8 \times 400 = 3,200$	$8 \times 9 = 72$

$409 \times 68 = 24,000 + 540 + 3,200 + 72 = 27,812$

b. • $17 = 10 + 7$ • $54 = 50 + 4$

	10	7
50	$50 \times 10 = 500$	$50 \times 7 = 350$
4	$4 \times 10 = 40$	$4 \times 7 = 28$

$17 \times 54 = 500 + 350 + 40 + 28 = 918$

✓ Check your understanding

Solve each of the following problems using an area model.

a. 618×43 b. 82×306

---

* While there are many ways to decompose a number numbers should be decomposed using place value when using an area model for multiplication For example, it is possible to decompose 23 in many different ways, including 17 and 6 , 10 and 13, or 14 and 9. However, 23 should be decomposed into 20 and 3 when using an area model for multiplication.

139

Learn ② The Distributive Property of Multiplication

The Distributive Property states that multiplying a sum by a number is the same as multiplying each addend by that number and adding the products.

For Example

To find 7 × 14 using the Distributive Property.

- Break apart 14 into (10 + 4).

$$7 \times (10 + 4) = (7 \times 10) + (7 \times 4)$$
$$= \quad + 28 = 98$$

- By using the area model.

	10	4
7	7 × 10 = 70	7 × 4 = 28

```
  7 0
+ 2 8
  9 8
```

7 × 14 = 98
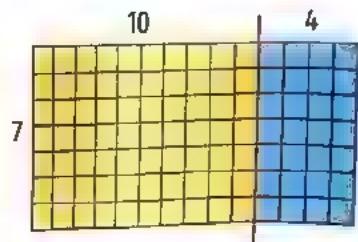
Notice that

14 can be broken apart in many ways such as : (7 + 7), (6 + 8), (5 + 9)....

Example 3

Use the Distributive Property to find the following products. Try to find another way to break apart. Represent the problems using an area model.

a. 46 × 27

b. 18 × 304

Solution

a. • Break apart 46 into 40 + 6

  • Break apart 27 into 20 + 7

	20	7
40	40 × 20 = 800	40 × 7 = 280
6	6 × 20 = 120	6 × 7 = 42

$$(40 + 6) \times (20 + 7) = (40 \times 20) + (40 \times 7) + (6 \times 20) + (6 \times 7)$$
$$= \quad 800 \quad + \quad 280 \quad + \quad 120 \quad + \quad 42$$
$$= \quad 1,242$$

b. • Break apart 18 into 10 + 8

  • Break apart 304 into 300 + 4

	300	4
10	10 × 300 = 3,000	10 × 4 = 40
8	8 × 300 = 2,400	8 × 4 = 32

$$(10 + 8) \times (300 + 4) = (10 \times 300) + (10 \times 4) + (8 \times 300) + (8 \times 4)$$
$$= \quad 3,000 \quad + \quad 40 \quad + \quad 2,400 \quad + \quad 32$$
$$= \quad 5,472$$

Notes for parents :

- Your child may incorrectly decompose that factors according to their digits rather than according to the values of their digits. He/She may decompose 14 as 1 and 4 rather than 10 and 4.

Example **4**

Use the following area models to write the distribution equations.

a.

	20	7
9	180	63

b.

	40	8
70	2,800	560
3	120	24

c.

	100	2
50	5,000	100
3	300	6

d.

	600	30	1
30	18,000	900	30
4	2,400	120	4

Solution 💡

a. $9 \times 27 = (9 \times 20) + (9 \times 7) = 180 + 63 = 243$

b. $73 \times 48 = (70 \times 40) + (70 \times 8) + (3 \times 40) + (3 \times 8)$

$\quad\quad - \quad 2,800 \ + \ 560 \ + \ 120 \ + \ 24 \ = 3,504$

c. $53 \times 102 = (50 \times 100) + (50 \times 2) + (3 \times 100) + (3 \times 2)$

$\quad\quad = \quad 5,000 \ + \ 100 \ + \ 300 \ + \ 6 \ = 5,406$

d. $34 \times 631 = (30 \times 600) + (30 \times 30) + (30 \times 1) + (4 \times 600) + (4 \times 30) + (4 \times 1)$

$\quad\quad = \quad 18,000 \ + \ 900 \ + \ 30 \ + \ 2,400 \ + \ 120 \ + \ 4 \ = 21,454$

Example **5**

Use the Distributive Property to solve 23×154.

Solution 💡

$23 \times 154 = (20 + 3) \times (100 + 50 + 4)$

$\quad = (20 \times 100) + (20 \times 50) + (20 \times 4) + (3 \times 100) + (3 \times 50) + (3 \times 4)$

$\quad = 2,000 + 1,000 + 80 + 300 + 150 + 12$

$\quad = 3,542$

• Your child get confused with how many zeroes to place at the end of a product. For example, your child may write $7 \times 2,000 = 1,400$ instead of $7 \times 2,000 = 14,000$. Your child may also write $5 \times 200 = 100$ instead of $5 \times 200 = 1,000$

141

Example 6

Find more ways to find the product of 32 × 48 using the Distributive Property and area model.

Solution

Know that : All the ways show the same product.

• **First way :** • Break apart 32 into 30 + 2
           • Break apart 48 into 40 + 8

	40	8
30	30 × 40 = 1,200	30 × 8 = 240
2	2 × 40 = 80	2 × 8 = 16

$(30 + 2) \times (40 + 8)$
$= (30 \times 40) + (30 \times 8) + (2 \times 40) + (2 \times 8)$
$= 1,200 + 240 + 80 + 16 = 1,536$

• **Second way :** • Break apart 32 into 20 + 10 + 2
           • Break apart 48 into 40 + 8

	40	8
20	20 × 40 = 800	20 × 8 = 160
10	10 × 40 = 400	10 × 8 = 80
2	2 × 40 = 80	2 × 8 = 16

$(20 + 10 + 2) \times (40 + 8)$
$= (20 \times 40) + (20 \times 8) + (10 \times 40)$
$+ (10 \times 8) + (2 \times 40) + (2 \times 8)$
$= 800 + 160 + 400 + 80 + 80 + 16 = 1,536$

• **Third way :** • Break apart 32 into 30 + 2
           • Break apart 48 into 20 + 20 + 8

	20	20	8
30	30 × 20 = 600	30 × 20 = 600	30 × 8 = 240
2	2 × 20 = 40	2 × 20 = 40	2 × 8 = 16

$(30 + 2) \times (20 + 20 + 8)$
$= (30 \times 20) + (30 \times 20) + (30 \times 8)$
$+ (2 \times 20) + (2 \times 20) + (2 \times 8)$
$= 600 + 600 + 240 + 40 + 40 + 16 = 1,536$

• **Try to find another ways as .** • Break apart 32 into 10 + 11 + 11
           • Break apart 48 into 20 + 20 + 8

✓ Check your understanding

Use the Distributive Property to find each of the following products.

  a. 26 × 42   b. 34 × 629

Notes for parents :

• Ask your child to find more ways to find the product of 32 × 48.

1. Complete.

a. 📖 $5 \times 1,000 =$ —————

b. 📖 $4 \times 10 =$ —————

c. $6 \times 100 =$ —————

d. 📖 $1,000 \times 7 =$ —————

e. $100 \times 3 =$

f. $1,000 \times$ ————— $= 8,000$

g. 📖 $10,000 \times$ ————— $= 80,000$

h. ————— $\times 9 = 900,000$

i. 📖 $2 \times$ ————— $= 2,000$

j. $40 \times$ ————— $= 4,000$

2. 📖 Writing Expressions. Write an expression to complete each equation using powers of ten for each given number.

a. $3,000 =$ ————— $\times$ —————

b. $800 =$ ————— $\times$ —————

c. $400,000 =$ ————— $\times$ —————

d. $70,000 =$ ————— $\times$ —————

e. $50 =$ ————— $\times$ —————

3. 📖 Multiplying Tens. How many times will 10 need to be multiplied by itself to equal each given number?

a. 100

b. 1,000

c. 10,000

d. 100,000

4. Complete each of the following area models.

a.

	30	8
10		
6		

b.

	50	4
20		
3		

c.

	100	70	5
80			
2			

d.

	300	60	1
50			
6			

143
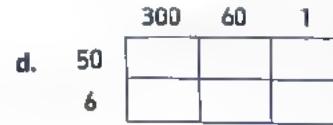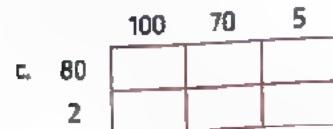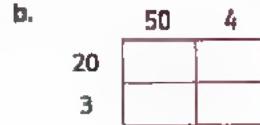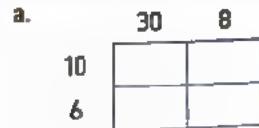
5. **Expanding Equations.** Create an area model for each of the following problems and find each product.

a. $21 \times 64 =$ ———

b. $103 \times 72 =$

c. ▢ $374 \times 62 =$

70 ——

2   140   8

d. ▢ $506 \times 42 =$

6. Solve each of the following problems using an area model.

a. $12 \times 25 =$ ———

b. $32 \times 71 =$ ———

c. $7 \times 483 =$ ———

d. $8 \times 107 =$ ———

e. $732 \times 16 =$ ———

f. $460 \times 21 =$ ———

g. ▢ $572 \times 98 =$

h. ▢ $201 \times 32 =$ ———

i. ▢ $659 \times 42 =$ ———

7. Use the **Distributive Property of Multiplication** and area model to find the product of each of the following.

a. $14 \times 27 =$ ———

$(10 \times 20) + (10 \times$ ———$) + ($— $\times 20)$

$+ (4 \times$ —$) =$ ———

	20	7
10	200	70
4	80	28

b. ▢ $58 \times 42 =$ ———

$(40 \times$ ———$) + (40 \times 8) + ($ — $\times 50) + (2 \times$) = ———

	50	8
40	2,000	320
2	100	16

c. $19 \times 62 =$ ———

$(10 \times$ —$) + ($ $\times 2) + ($—$\times 60) + (9 \times$ —$) =$ ———

	60	2
10	600	20
9	540	18

144

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d. 📖 $(20 \times 30) + (\underline{\quad} \times \underline{\quad}) + \{\underline{\quad} \times \underline{\quad}\} + (4 \times 7) = \underline{\quad\quad}$

	30	7
20	600	140
4	120	28

e. 📖

	40	7
30	1,200	210
9	360	63

_____

_____

f. 📖

	60	3
20	1,200	60
9	540	27

_____

_____

8. Complete the area model and evaluate.

a. $(50 \times 30) + (50 \times 4) + (7 \times 30) + (7 \times 4) = \underline{\quad\quad}$

	30	4
50	_____	200
	210	_____

b. 📖 $(40 \times 40) + (40 \times 8) + (9 \times 40) + (9 \times 8) = \underline{\quad\quad}$

	40	_____
_____	1,600	_____
9	_____	72

9. 📖 **Decompose with Area Model.** Eman is planting a garden. She wants to find the area of the garden to know how much topsoil she will need. The garden is 46 meters long and 24 meters wide. How many different ways can you decompose the numbers to help her find the area ?

$46 \times 24 = \underline{\quad\quad\quad}$

	20	20	6
20			
4			

145

10. (.) Flexible Numbers Solve.

a. Here are three ways students thought to find the product : 14 × 83. Record their work in an area model and evaluate. Remember the addends on each side must equal 83 and 14 respectively.

Mazen : $(40 \times 10) + (40 \times 10) + (40 \times 4) + (40 \times 4) + (3 \times 10) + (3 \times 4)$

	40	40	3
10			
4			
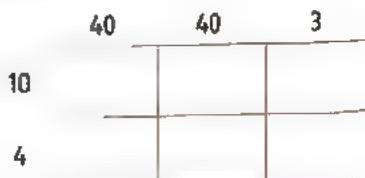
Lamiaa : $(80 \times 7) + (80 \times 7) + (3 \times 7) + (3 \times 7)$

	80	3
7		
7		

Reeda : $(80 \times 10) + (80 \times 4) + (3 \times 10) + (3 \times 4)$

	80	3
10		
4		
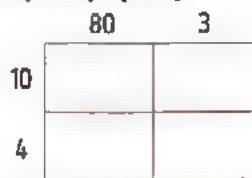
b. Here are three ways students thought to find the product : 33 × 26 using an area model. Write an expression for each model.
, then choose one of the area models to evaluate the expression.

	30	3
20		
6		

	20	10	3
20			
6			

	11	11	11
10			
10			
6			
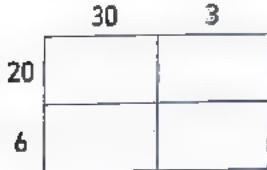
c. Create an area model and evaluate : 42 × 34 = _____

146

11. Use the Distributive Property to solve each problem.

a. $7 \times 45 =$ ———

b. $2 \times 98 =$ ———

c. $13 \times 66 =$ ———

d. $37 \times 52 =$ ———

e. $24 \times 107 =$ ———

f. $48 \times 215 =$ ———

g. $53 \times 246 =$ ———

h. $9 \times 3{,}123 =$ ———

i. $6 \times 2{,}031 =$ ———

12. ▢ Ali walks 6 kilometers each day. If he walked 187 days a year , how many kilometers would he walk ?

13. ▢ What if Ali were to drive 60 kilometers each day ? How many kilometers would he drive in 187 days ?

14. Mina runs 14 hours every week. What is the number of running hours in 52 weeks?

15. Sara bought 36 boxes of juice for 125 L.E. each. How much money did Sara pay in all ?

16. Eslam ordered 387 books for his library. Each book costs 46 L.E. How much money did Eslam pay in all ?

17. Complete.

a. $15 \times 46 = (10 \times \quad) + (10 \times 6) + (5 \times 40) + (\text{———} \times 6)$

b. $328 \times 67 = (300 + \text{——} + 8) \times (30 + \text{——} + 7)$

c. $253 \times \text{——} = (70 \times 200) + (70 \times 50) + (70 \times 3) + (4 \times 200) + (4 \times 50) + (4 \times 3)$

d. $63 \times 1{,}905 = (60 \times \text{——}) + (60 \times \text{——}) + (60 \times \text{——}) + (3 \times \text{——}) + (3 \times \text{——}) + (3 \times \text{——})$

e. $\text{——} \times 35 = (30 \times 400) + (30 \times 70) + (30 \times 8) + (\text{——} \times 400) + (\text{——} \times 70) + (\quad \times 8)$

147

f. $234 \times 57 = (200 \times 50) + (200 \times 7) + (30 \times 50) + (30 \times \underline{\quad}) + (4 \times 50) + (4 \times 7)$ (Cairo 23)

g. $38 \times 14 = (30 \times \underline{\quad}) + (30 \times 7) + (8 \times \underline{\quad}) + (8 \times \underline{\quad})$

18. **Error Analysis** : Read the problem and complete the error analysis.

Badir thinks $206 \times 45 = 11,700$. Identify what Badir did correctly and incorrectly and then solve the problem.

	200	60	0
40	8,000	2,400	0
5	1,000	300	0

```
  8, 0 0 0
+ 1, 0 0 0
+ 2, 4 0 0
+    3 0 0
---------
 11, 7 0 0
```

1. What did the student do correctly ?

2. What did the student do incorrectly ? Why do you think he made this error ?

3. Try to solve the problem correctly. Explain your thinking.

19. 📖 **Math around Egypt** : The Fennec Fox

Use a model to solve the problem.

When a Fennec fox builds a den, it can have up to 15 different entrances.

How many entrances could 32 dens have ?

Fennec Fox

20. 📖 **Math around Egypt** :

Omar owns a travel company that takes visitors throughout the mountains of the Eastern Desert which is a mountain range that runs parallel to the Red Sea coast.

He has 12 buses. Each bus can hold 25 passengers.

How many passengers can Omar take each day if every bus is full ?

148

Choose the correct answer.

1. $(100 + 100 + 70 + 4) \times (6 + 80) =$ ——

A. 174×86 B. 174×68

C. 274×86 D. 274×68

2. $(3 \times 61) + (5 \times 61) =$ —— $\times 61$

(El Menia - Deir Mawas 23)

A. 53   B. 35

C. 8   D. 6

3. $(40 \times 23) + (2 \times 23) =$ —— $\times 23$

(Cairo - El Sherouk 23)

A. 24   B. 42

C. 8   D. 6

4. $(11 \times 3) + (11 \times 20) + (11 \times 100) = 11 \times$ ——

(Ismailia 23)

A. 123   B. 321

C. 213   D. 210

5. $85 \times 69 = (80 \times 60) + (80 \times 9)$
$+ (5 \times 9) + [$ —— $]$

A. 5×6 B. 5×60

C. 50×6 D. 50×60

6. —— $= (50 \times 600) + (50 \times 30) + (50 \times 1)$
$+ (3 \times 600) + (3 \times 30) + (3 \times 1)$

A. 536×51 B. 635×31

C. 631×53 D. 651×35

7. What is the unknown value in the area model of 53×795 ?

	700	90	5
50	?	4,500	250
3	2,100	270	15

A. 4,500   B. 3,500

C. 35   D. 35,000

8. A merchant bought 136 boxes of juice for 25 pounds each. How much money did he pay ?

A. 3,400 L.E.   B. 3,170 L.E.

C. 3,200 L.E.   D. 3,236 L.E.

9. $24 \times 136 =$ ——

A. $(20 \times 100) + (20 \times 3) + (20 \times 6)$
$+ (4 \times 100) + (4 \times 30) + (4 \times 6)$

B. $(20 \times 100) + (20 \times 30) + (20 \times 6)$
$+ (4 \times 100) + (4 \times 30) + (4 \times 6)$

C. $(4 \times 1) + (4 \times 3) + (4 \times 6) + (2 \times 1)$
$+ (2 \times 3) + (2 \times 6)$

D. $(2 \times 100) + (2 \times 30) + (2 \times 6)$
$+ (4 \times 100) + (4 \times 30) + (4 \times 6)$

10. $73 \times 24 =$ ——

A. $(70 \times 40) + (70 \times 2) + (3 \times 40)$
$+ (3 \times 2)$

B. $(70 \times 10) + (70 \times 10) + (70 \times 4)$
$+ (3 \times 10) + (3 \times 10) + (3 \times 4)$

C. $(70 \times 20) + (70 \times 20) + (3 \times 20)$
$+ (3 \times 20)$

D. $(7 \times 20) + (7 \times 4) + (30 \times 20)$
$+ (30 \times 4)$

149

• Multiplying by a 2-Digit Number Using the Algorithm

• Multiplying Multi-Digit Numbers

Learn ① **Multiplying numbers using the algorithm**

An animator creates 24 pictures for each second of an animated cartoon.

How many pictures are drawn to make a cartoon that is 45 seconds long?

Multiply: 24×45

── Step 1 ──	── Step 2 ──	── Step 3 ──
Multiply by ones.	Multiply by tens.	Add the products.
②	①	①
2 4	②	②
	2 4	2 4
× 4 5	× 4 5	× 4 5
1 2 0 ← 5 × 24	1 2 0	1 2 0
	9 6 0 ← 40 × 24	+ 9 6 0
		1, 0 8 0

So, the animator creates 1,080 pictures to make a 45–second cartoon.

How to multiply 4-digit number by 2-digit number?

Multiply: $1,625 \times 24$

── Step 1 ──	── Step 2 ──	── Step 3 ──
Multiply by ones.	Multiply by tens.	Add the products.
②①②	① ①	1, 6 2 5
1, 6 2 5	②①②	× 2 4
× 2 4	1, 6 2 5	①
6, 5 0 0 ← (4 × 1,625)	× 2 4	6, 5 0 0
	6, 5 0 0	+ 3 2, 5 0 0
	3 2, 5 0 0 ← (20 × 1,625)	3 9, 0 0 0

Notes for parents :

• Your child sometimes has difficulty demonstrating proper regrouping when using the standard algorithm for multiplication. He/She may omit writing the digit above the correct place or he/she may attempt to place two digits at a time in the product.

Example **1**

Use standard algorithm strategy to find the result.

a. 26 × 17   b. 429 × 25   c. 1,342 × 34

Solution 💡

a.
```
      ④
      2 6
  ×   1 7
    1 8 2
  + 2 6 0
    4 4 2
```

b.
```
         ①
       ④ ④
       4 2 9
    ×    2 5
     2, 1 4 5
  + 8, 5 8 0
   10, 7 2 5
```

c.
```
       ①   ①
       ④   ④
    1, 3 4 2
    ×    3 4
     5, 3 6 8
  + 40, 2 6 0
   45, 6 2 8
```

✅ **Check** your understanding

Use standard algorithm strategy to find the result.

a. 35 × 862   b. 74 × 5,641   c. 2,504 × 16

The relation between area model, and standard algorithm for multiplication :

For Example · **Multiply** · 23 × 41

The two strategies give the same result but standard algorithm is the most efficient.

Area model

```
       40    1
   20 ( 800 ) ( 20 )
    3 ( 120 ) (  3 )
```

Standard Algorithm

```
       ①
       2 3
   ×   4 1
       2 3
   + 9 2 0
     9 4 3
```

20 + 3 = 23
800 + 120 = 920

✅ **Check** your understanding
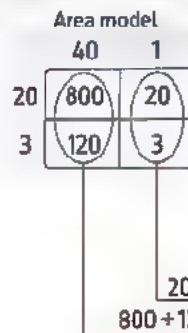
Find in the area model from the standard algorithm.

```
                5 4
            ×   3 6
              3 2 4
          + 1, 6 2 0
            1, 9 4 4
```

```
          4
   30 |___|___|
      |   |   |
      |___|___|
```

• Ask your child to multiply any number by a two-digit number.   151

Learn ② Estimating products

You will learn how to use rounding to estimate product.

Example

A merchant has 127 boxes of pens. Each box holds 36 pens.
About how many pens does the merchant have?

Solution

Round to greatest place value

```
  127  ►   100
×  36  ►  ×  40
         4, 000
```

The actual product
(using standard multiplication strategy)

```
        2
       1 4
       127
   ×    36
       762
   + 3,810
     4,572
```

Since 4,572 is close to 4,000 the answer is reasonable.

✓ Check your understanding

Solve the following. First by estimate by round to the greatest place value, second use standard algorithm to find the actual product.

a. 872 × 23

b. 3,254 × 49

Estimate : ————————

Estimate : ————————

Actual product : ———————

Actual product : ———————

Multiplying by a 2-Digit Number Using the Algorithm
Multiplying Multi-Digit Numbers

1. Find the result using standard algorithm.

a.
```
   26
 × 33
------
```

b.
```
   78
 × 52
------
```

c.
```
  367
 × 29
------
```

d.
```
  546
 ×  18
------
```

2. 📖 Fill in the area model. Then, explain which parts of the area model and the standard algorithm match.

```
        70        6

 20  ┌────────┬────────┐
     │        │        │
     ├────────┼────────┤
  4  │        │        │
     └────────┴────────┘
```

```
         1
         ⁄
        7 6
  ×     2 4
  ---------
        3 0 4
  + 1, 5 2 0
  ---------
    1, 8 2 4
```
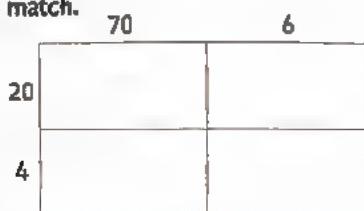
3. Determine the values of the missing digits and then find the final product.

a. 📖
```
        4
        ⁄
      6 7
  ×   7 6
  -------
    4 0 2
  + ▢6 9▢
  -------
  ▢
```

b.
```
      6
      ⁄
    4 9
  × 7 8
  -----
  3 ▢ 2
  + 3 ▢ 3 0
  -------
  ▢
```

c.
```
      1
      ⁄ 1
    5 6 3
  ×   2 4
  -------
  2 2 5 ▢
  + 1 ▢ 2 ▢ 0
  ---------
  ▢
```

4. Find the result.

a. 7 × 134

b. 3 × 5,672

c. 6 × 3,407

d. 📖 76 × 82

e. 18 × 107

f. 📖 234 × 53

g. 867 × 64

h. 13 × 1,025

i. 47 × 8,640

j. 51 × 9,037

k. 70 × 8,617

l. 2,987 × 66

m. 9,984 × 27

n. 7,892 × 34

o. 98 × 6,754

5. Solve the following. First by estimate by round to the greatest place value, second use standard algorithm to find the actual product.

a.   Estimate
    8 8 8 →
  ×   2 9 → × _____

b.   Estimate
    7 2 1 →
  ×   7 4 → × _____

c.   Estimate
    4, 6 2 5 →
  ×   1 8 → × _____

6. Estimate the product.

a. 416×72

b. 871×27

c. 586×69

d. 490×71

e. 817×34

f. 999×94

7. 📖 Akram says that 34×69 will give you the same product as $(34 \times 70) - 34$

Do you agree or disagree ? Why ?

_____

_____

8. A group of 48 people want to travel by bus. Each bus ticket costs 175 L.E.

How much do they need to pay in all ?   (Giza 23)

_____

9. Circle the problem that has the greatest product.

        468   320   1, 2 1 0
      × 23   × 48   ×   5
      _____   _____   _____

10. Circle the problem that has the smallest product.

      2,263   954   589
      ×   7   × 18   × 26
      _____   _____   _____

154

Choose the correct answer.

1. $342 \times 19 = $ ——

A. 6,188   B. 6,198   C. 6,498   D. 5,498

2. $25 \times 7,561 = $ ——

A. 188,025   B. 177,005   C. 175,705   D. 189,025

3. $17 \times 18 \bigcirc 20 \times 11$

A. >   B. <   C. =

4. What is the Ones digit in the product of 37×124?

A. 2   B. 3   C. 6   D. 8

5. Which product is NOT correct?

A. $24 \times 36 = 864$ B. $43 \times 702 = 30,186$

C. $321 \times 16 = 5,036$ D. $81 \times 205 = 16,605$

6. The product of 372×52 is close to

A. 20,000   B. 15,000   C. 7,000   D. 10,000

7. Estimate the product of 971×23 is

[Cairo - Zaiton 23]

A. 20,000   B. 8,000   C. 2,000   D. 20

8. $327 \times 53 \bigcirc 199 \times 43$

A. >   B. <   C. =

9. $320 \times 15 = $ ——

A. 48   B. 48 tens

C. 48 hundreds   D. 48 thousands

10. The missing number in the product is ——

A. 2,882

B. 10,122

C. 2,892

D. 2,880

$$\begin{array}{r} 723 \\ \times \quad 14 \\ \hline \\ +\,7,230 \\ \hline 10,122 \end{array}$$

155

Learn : How to solve multistep problems ?

Some problems require more than one step.
To solve them, write out the steps you will use.

For Example :

Sayed sells pins and scarves.
He earned 6,000 pounds in just 4 months.
If he sold 80 pins for 15 pounds each,
how much did he earn from selling
scarves ?

Read to understand

• What question do you need to answer ?

How much did he earn from selling scarves ?

• What information do you have?

the total amount he earned : 6,000 pounds, the number of pins sold : 80 pins : the amount paid for each pin : 15 pounds per pin.

Plan

• How can you find the amount he earned selling scarves ?

Find the amount he earned selling pins. Then subtract that from 6,000 pounds

Solve

• Step 1 : *Find the amount he earned selling pins :*

$$80 \times 15 = 1,200 \text{ pounds}$$

• Step 2 : *Find the amount he earned selling scarves :*

$$6,000 - 1,200 = 4,800 \text{ pounds}$$

Sayed earned 4,800 pounds selling scarves.

Notes for parents :

• Remind your child that multistep problem is a problem that involves more than one operation.

Example 1

Ahmed has a restaurant in Cairo in Monday he sold 213 sandwish of chicken. in Tuesday he sold 225 sandwish of chicken. He makes each sandwish of chicken with 75 grams of chicken. How many grams of chicken did he use in Monday and Tuesday?
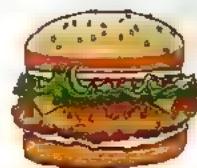
Solution

- The number of grams that sold in Monday = 213 × 75 = 15,975 grams.
- The number of grams that sold in Tuesday = 225 × 75 = 16,875 grams.
- The number of grams that sold in Monday and Tuesday = 15,975 + 16,875 = 32,850 grams.

Example 2

A merchant bought 137 boxes of soft drinks for 97 pounds each and 17 boxes of cookies for 45 pounds each. How much money did he pay?

Solution

- The price of soft drinks = 137 × 97 = 13,289 pounds.
- The price of cookies = 17 × 45 = 765 pounds.
- The total price = 13,289 + 765 = 14,054 pounds.

check your understanding

A pair of trousers costs 125 pounds, a shirt costs 140 pounds and a pair of shoes costs 135 pounds. Ahmed wants to buy 3 pairs of trousers, 2 shirts and a pair of shoes.

How much is the total cost?

_____

_____
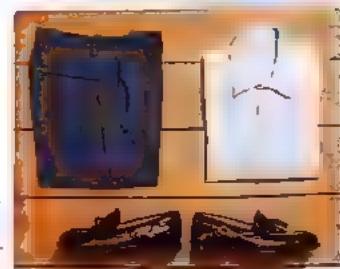
* Some word problems have hidden question or questions that must be answered before you can solve the problem. You have to determine what operation to use and what strategies will you use to help you figure out how to solve the problem.

157

1. Sandwiches at the dinner are 24 pounds, a salad costs
   3 pounds and a glass of juice is 8 pounds. A Family went to
   the diner and order 3 sandwiches, 2 salads and 3 glasses
   of juice.
   a. How much will the family pay for the 3 sandwiches ? ‗‗‗‗
   b. How much will the family pay for the 2 salads ? ‗‗‗‗
   c. How much will the family pay for the 3 glasses of juice ? ‗‗‗‗
   d. How much is the total bill ? ‗‗‗‗

2. Shirts in the seasons costs 185 pounds. Sweaters cost
   270 pounds. Yara and her friends bought 12 shirts and
   13 sweaters.
   a. How much will they pay for the shirts ? ‗‗‗‗
   b. How much will they pay for the sweaters ? ‗‗‗‗
   c. How much is their bill ? ‗‗‗‗

3. 📖 Mona has a restaurant in Al-Quesyr. It is a tourist city
   located on the coast of the Red Sea. In February, Mona sold
   402 kebabs. In March, she sold 753 kebabs. She makes each
   kebab with 83 grams of meat. **How many grams of meat did
   she use in February and March?**

4. 📖 Wael makes baklava. It needs 170 grams each of
   pistachios, walnuts, and hazelnuts. In order to make
   enough for restaurant customers, he needs to multiply his
   recipe by 18.
   How many total grams of nuts will he need ?

158

5. A factory can produce 500 pairs of pants during a 10-hr. per day.
   If the factory produces 55 pairs per hour for the first 8 hr.
   How many are left to produce during the rest
   of the day ? ———
   How many pairs of pants can produce during 30 days ?

6. Petra saved 123 pounds, Logy saved 12 times as Petra,
   Mariam saved 15 times as Petra.
   How much money they saved ? ———

7. 📖 For Wael's baklava syrup, he needs 250 mL of honey,
   15 mL of orange extract, and 30 mL of lemon juice per recipe.
   How many total milliliters of liquid ingredients will he
   need for the sauce if he needs to make 18 batches ?

8. 📖 Mona uses 140 grams of sesame seeds to make 120
   milliliters of tahini. She makes the recipe 20 t mes each week.
   How many grams of sesame seeds does she use each week ?
   How many milliliters of tahini does she make in 36 weeks ?

9. A factory produces 6,580 toys each month. Another factory
   produces 7,375 toys each month. Find the difference of their
   product in one year.

10. 📖 Mona uses 6 lemons for each liter of lemonade.
    She makes 8 liters of lemonade a day. After 365 days,
    how many lemons has she used ?
    How many liters of lemonade does she make in 365 days ?
    Mona uses 1,133 grams of sugar daily.
    How many grams does she use in 30 weeks ?

159

1. Choose the correct answer.

1. Estimate the product of 971 × 23 is   (Cairo – El Zaiton 23)

   A. 20,000   B. 8,000   C. 2,000   D. 20

2. 38 × 564 = ———

   A. 20,532   B. 21,433   C. 21,432   D. 20,332

3. A merchant bought 136 boxes of juice for 25 L.E. each. How much money did he pay ?

   A. 3,400 L.E.   B. 3,170 L.E.   C. 3,200 L.E.   D. 3,236 L.E.

4. What is the unknown value in the area model of 53 × 795 ?

	700	90	5
50	?	4,500	250
3	2,100	270	15

   A. 4,500   B. 3,500

   C. 35   D. 35,000

5. 160 × 15 = ———

   A. 24 Thousands   B. 24 Hundreds   C. 24 Tens   D. 24 Hundredths

6. 327 × 53 ◯ 199 × 43

   A. >   B. <   C. =

7. Which distributive products can be used to solve 83 × 15 ?

   A. $(8 × 1) + (8 × 5) + (3 × 1) + (3 × 5)$ B. $(80 × 10) × (80 × 5) × (3 × 10) × (3 × 5)$

   C. $(80 × 10) + (80 × 5) + (3 × 10) + (3 × 5)$ D. $(80 × 1) + (80 × 5) + (3 × 10) + (3 × 5)$

2. Complete the following.

1.
$$\begin{array}{r} 7,585 \\ \times\ \ \ \ 73 \\ \hline 22,755 \\ \hline \end{array}$$

2. 130 × 30 = ———   (Giza – Awseem 23)

3. ——— × 1,000 = 340,000

4. The product of 899 × 11 is closer to the product of ——— × ———   (Souhag 23)

5. Sara bought 36 books for 100 L.E. each. She paid = ———

6. 4,231 × 3 = ———   (Giza – Awssem 23)

7. The Ones digit of the product of 2,786 × 84 will be —

8. 78 × ——— = $(3 × 8) + (20 × 8) + (3 × 70) + (20 × 70)$ (Giza – Abo El Nomrus 23)

160

3. Choose the correct answer.

1. 49×523 is closer to _____

   A. 2,500   B. 25,000   C. 20,000   D. 2,000

2. A shoes costs 400 L.E. , which is 4 times as much as a shirt costs
   , then a shirt cost = _____ L.E.   [Aswan – Kom Ombo 23]

   A. 500   B. 396   C. 300   D. 100

3. The multiplication problem which expresses the opposite
   area model is _____

	60	5
40	2,400	200
3	180	15

   A. 46×35 B. 56×34

   C. 65×43 D. 43×605

4. $24 \times 15 =$ _____ Tens

   A. 360   B. 36   C. 3.6   D. 3,600

5. $74 \times$ _____ $= (74 \times 5) + (74 \times 3)$ [Cairo – El Marg 23]

   A. 8   B. 15   C. 47   D. 74

6. $29 \times$ _____ $= 2,900$

   A. 10   B. 100   C. 1,000   D. 10,000

7. 3 Hundreds $\times$ 7 Hundreds = _____ Hundreds.

   A. 210,000   B. 2,100   C. 21,000   D. 21

---

4. Answer the following questions.

1. Ahmed has 300 pounds to spend on new clothes. If he bought 12 pair of socks for
   18 pounds a pair.
   How much money will he have left to spend ?   [Cairo – El Khalifa and El Mokattam 23]

2. Youssef walk every day 5 km, if he walk 154 days in the year. How many kilometers did
   he walk ?   [E. Kalyoubia 23]

3. Ahmed bought 10 pens of the same type, if the price of one pen is 4.5 pounds.
   How much money Ahmed paid ?   [Souhag 23]

4. Fill in the area model. Then explain which parts of the area model and the standard
   algorithm match.

	80	5
60	___	___
3	___	___

   ```
        3
        8̷ 5
   ×    6 3
   ─────────
        2 5 5
   + 5, 1 0 0
   ─────────
     5, 3 5 5
   ```

161

UNIT **4**

Division with Whole Numbers

▶ Concept 1 :
Models for Division

▶ Concept 2 :
Dividing by 2-Digit
Divisors

Did You Know?!

▶ Cheetah is the fastest land
animal in the world.
A cheetah can reach 112
kilometers per hour. If
a cheetah ran for quarter
an hour at its fastest speed,
how far could it run ?

▶ The ostrich is the world's
largest bird. It stands up
to a massive 2.7 m tall and
weighs as much as 159 kg
— that's around 1 m taller
than the average man,
and the mass of two men
combined!

Models for Division

Lesson No.	Lesson Name	Learning Objectives
Lessons 1&2	Dividing by a Two-Digit Number	• Students will use the area model to solve division problems.
	Estimating Quotients	• Students will use estimations to check the reasonableness of their answers.

- **Dividing by a Two-Digit Number**
- **Estimating Quotients**

What a division ?

- **Division** : The act of breaking into equal parts or groups.
- **Dividend** : The number being divided.
- **Divisor** : The number that divides.
- **Quotient** : The answer to a division problem.
- **Remainder** : The amount left over that is not enough to form another equal group.

$$\underline{28} \div \underline{3} = \underline{9} \quad \underline{R1}$$

Dividend   Divisor   Quotient   Remainder

Note that

The remainder is always less than the divisor.

Remember :

Basic facts, pattern and place value can help you divide.

┌ Use the basic fact $2 \times 3 = 6$ ┐

$$2 \times 3 = 6$$
$$20 \times 3 = 60$$
$$200 \times 3 = 600$$
$$2,000 \times 3 = 6,000$$

Three zeroes   Three zeroes

┌ Use the basic fact $6 \div 3 = 2$ ┐

$$6 \div 3 = 2$$
$$60 \div 3 = 20$$
$$600 \div 3 = 200$$
$$6,000 \div 3 = 2,000$$

Three zeroes   Three zeroes

Remember how to Divide by one-digit number by using the area model :

Divide : $615 \div 3$

	200	5
3	$3 \times 200 = 600$	$3 \times 5 = 15$

So , $615 \div 3 = 200 + 5 = 205$

Notes for parents :
- Remind your child that he/she practised solving devision problems with a 1-digit divisor using an area model in primary 4

164

Learn ① Dividing by a two-digit number

A factory made 1,845 T-shirts in 15 days.
If the factory made the same amount daily
, how many T-shirts did the factory make each day ?
To determine the number of T-shirts in each day , we should divide 1,845 by 15

By using the area model

Step 1

Draw a long rectangle and write 15 on
the smaller .eft side of the rectangle.

15	

Step 2

Try to use basic facts and pattern to
get close to 1,845
$15 \times 1 = 15$, $15 \times 10 = 150$
, $\boxed{15 \times 100 = 1,500}$ (close to 1,845)
• Subtract $1,845 - 1,500 = 345$

```
           100
       1, 8 4 5
15   - 1, 5 0 0
         3 4 5
```

Step 3

There are 345 left to be divided by 15
$15 \times 2 = 30$
, $15 \times 20 = 300$ (close to 345)
• Subtract $345 - 300 = 45$

```
           100      20
       1, 8 4 5    3 4 5
15   - 1, 5 0 0   - 3 0 0
         3 4 5      4 5
```

Step 4

Since, there are 45 left to be divided by 15
$15 \times 1 = 15$, $15 \times 2 = 30$, $\boxed{15 \times 3 = 45}$ (the same number)
• Subtract : $45 - 45 = 0$

```
           100      20       3
       1, 8 4 5    3 4 5    4 5
15   - 1, 5 0 0   - 3 0 0  - 4 5
         3 4 5      4 5     0 0
```

Step 5

Add the 3 numbers $100 + 20 + 3 = 123$
then : $1,845 \div 15 = 123$
The factory made 123 T-shirts daily.

• Ask your child to solve many exercises on division by two-digit number.

165

Example 1

Use the area model to solve each of the following problems.

a. $9,798 \div 71$ b. $7,391 \div 35$ c. $2,700 \div 90$

Solution

a.

	100	10	10	10	8
71	9,798 − 7,100 2,698	2,698 − 710 1,988	1,988 − 710 1,278	1,278 − 710 568	568 − 568 000

Then, $9,798 \div 71 = 100 + 10 + 10 + 10 + 8 = 138$

b.

	100	100	10	1
35	7,391 − 3,500 3,891	3,891 − 3,500 391	391 − 350 41	41 − 35 6 ← The remainder

Then, $7,391 \div 35 = (100 + 100 + 10 + 1)$ and remainder 6

         $= 211 \text{ R}6$

c.

	10	10	10
90	2,700 − 900 1,800	1,800 − 900 900	900 − 900 000

Notice that

We can use mental math to divide $2,700 \div 90$ by canceling from each side 0, then, $270 \div 9 = 30$

Then, $2,700 \div 90 = 10 + 10 + 10 = 30$

✓ Check your understanding

1. Complete.

a. If $34 \div 8 = 4 \text{ R}2$, the dividend is _____ and the remainder is _____

b. $203 \div 4 = 50 \text{ R}$ _____

2. Solve the following problems using the area model.

a. $5,325 \div 25$ b. $3,930 \div 12$

Notes for parents :
- Remind your child to use multiplication to check his/her answer when he/she solved a division problem

Learn ② Estimating quotient

We can use estimation to check the reasonableness of our answers.

For Example : To estimate the quotient of $1,920 \div 16$

Step 1 Round the dividend to the nearest thousand.

Step 2 Round the divisor to the nearest ten.

Step 3
$$1,920 \div 16$$
$$2,000 \div 20 = 100$$

Example 2

Estimate using compatible numbers.
Then, solve using an area model $4,641 \div 51$

Solution

- Estimate : $4,641 \longrightarrow 5,000$ • Estimate : $51 \longrightarrow 50$ Then, $5,000 : 50 = 100$
- Finding the actual quotient using area model :

	80	10	1
51	4,6 4 1 - 4,0 8 0 5 6 1	5 6 1 - 5 1 0 5 1	5 1 - 5 1 0

Then, $4,641 \div 51 = 80 + 10 + 1 = 91$

Estimation : 100   Exactly : 91

The answer is reasonable.

✓ Check your understanding

Estimate using compatible numbers. Then, solve using an area model.

a. $3,024 \div 14$ b. $7,550 \div 35$

- Discuss the purpose of rounding versus basic facts to estimate by asking your child which method makes the problem easier to calculate mentally. Demonstrate how using a basic fact makes estimating easier for $4,641 \div 51$ by having your child try to find each of these quotients mentally : $5,000 \div 50$, $4,500 \div 50$.   167

1. **Complete the following.**

   1. If $676 \div 52 = 13$, then the dividend is ——— [Cairo – El Zaiton 2]

   2. The remainder of divided 17 by 5 is ——— [Cairo – El Salam 2]

   3. The quotient in $480 \div 10 = 48$ is ——— [Souhag 2]

   4. $34 \div 4 = 8 R$ ——— [Alexandria – First Montaza 2]

   5. $0 \div 23 =$ ——— [Giza - Awseem 2]

2. **Complete each set of multiplication and division equations.**

a. ⊡ $3 \times 5 =$ ———	b. $12 \times 3 =$ ———	c. ⊡ $4 \times 2 =$ ———
$3 \times 50 =$ ———	$12 \times 30 =$ ———	$40 \times 20 =$ ———
$3 \times 500 =$ ———	$12 \times 300 =$ ———	$400 \times 200 =$ ———
d. $6 \div 3 =$ ———	e. $18 \div 6 =$ ———	f. $35 \div 7 =$ ———
$60 \div 3 =$ ———	$180 \div 6 =$ ———	$350 \div 7 =$ ———
$600 \div 3 =$ ———	$1,800 \div 6 =$ ———	$3,500 \div 7 =$ ———

3. **Use mental math to divide.**

a. ⊡ $3,600 \div 9 =$ ———	b. $4,000 \div 5 =$ ———	c. $160 \div 80 =$
d. ⊡ $140 : 20 =$ ———	e. ⊡ $5,600 \div 70 =$	f. ⊡ $2,400 \div 80 =$ ———
g. ⊡ $8,100 \div 90 =$	h. $6,300 \div 30 =$ ———	i. $12,000 \div 40 =$

4. **Use the area model strategy to solve the division equations.**

   a. ⊡ $2,207 \div 7 =$

   b. $2,794 \div 11 =$ ——— ———

168

c. 📖 1,625 ÷ 13 = ———

d. 7,896 ÷ 12 = ———

e. 1,035 ÷ 23 = ———

f. 1,428 ÷ 21 = ———

g. 4,410 ÷ 45 =

h. 5,479 ÷ 15 =

5. 📖 Choose the correct area model that represents each problem and fill in any missing numbers. Then, use the area model to answer each problem.

1. 9,234 ÷ 81 =

a.

	100	10	6
31	3,622	522	212
	- 3,100	- 310	- 186
	522	212	26

100 + 10 + 6 = 116 R26

2. 3,622 ÷ 31 = ———

	100	50
	1,050	350
	- 700	- 350
	350	0

100 + 50 = 150

3. 1,050 ÷ 7 = ———

c.

	———	———		———
81	9,234	1,134	324	162
	- 8,100	- 810	- 162	- 162
	1,134	324	162	0

——— + ——— + ——— + ——— = ———

169

6. Compatible Numbers. Estimate using compatible numbers. Then, solve using an area model.

a. 5,814 ÷ 47 =

Estimation:

Solution:

b. 6,397 ÷ 28 =

Estimation:

Solution:

c. 1,448 ÷ 48 =

Estimation:

Solution:

d. 7,061 ÷ 23 =

Estimation:

Solution:

e. 6,658 ÷ 69 =

Estimation:

Solution:

f. 1,064 ÷ 19 =

Estimation:

Solution:

7. Writing About Math. Error Analysis. Look at the problem, and analyze the student's area model. Identify what the student did incorrectly.

Divide : 2,852 ÷ 24 = ———

Student's area model: $24\overline{)2,852}$

10	5	100	3
2,852	2,612	2,492	92
24 − 240	− 120	− 2,400	− 72
2,612	2,492	92	20

2,852 ÷ 24 = 20

Challenge

8. Which choice best completes the area model to find 1,754 ÷ 14 ?

A. 10

B. 20

C. 30

D. 100

100	?	5
1,754	354	74
14 − 1,400	−	− 70
354	74	04

R4

Choose the correct answer.

1. The divisor in 216 ÷ 43 = 5 R1 is ───────   (Ismailia 23)

   A. 216   B. 43   C. 5   D. 1

2. 640 ÷ ─────── = 640   (Souhag 23)

   A. 0   B. 1   C. 10   D. 100

3. In the opposite area model, which choice best represents the problem?

	100	10	5	1
15	1,740	240	90	15
	− 1,500	− 150	− 75	− 15
	240	90	15	00

   A. 1,740 ÷ 15 = 1,151   B. 1,740 ÷ 15 = 100 + 151

   C. 1,740 ÷ 15 = 116   D. 1,740 ÷ 51 = 116

4. Which area model best represents 2,583 ÷ 21?

A.

	100	20	3
21	2,583	483	63
	− 2,100	− 420	− 63
	483	63	00

B.

	100	10	3
21	2,583	483	263
	− 2,100	− 210	− 263
	483	263	000

C.

	100	10	42
21	2,583	483	63
	− 2,100	− 420	− 63
	483	63	00

D.

	100	20	6
21	2,583	483	63
	− 2,100	− 420	− 63
	483	63	00

5. 29 ÷ 4 = 7 R ───────   (Cairo – El Marg 23)

   A. 0   B. 1   C. 2   D. 3

6. 1,515 ÷ 15 = ───────   (Ismailia 23)

   A. 11   B. 101   C. 1,001   D. 15

7. 4,150 ÷ 29 = 143 R ───────   (Giza – Awssem 23)

   A. 4   B. 2   C. 1   D. 3

8. 2,002 ÷ 22 = ───────

   A. 19   B. 91   C. 109   D. 901

171

Dividing by 2-Digit Divisors

Lesson No	Lesson Name	Learning Objectives
Lessons 3&4	Using the Division Algorithm	• Students will use the standard algorithm to divide by a 2-digit divisor.
	The Relation between Division and Multiplication	• Students will use the standard algorithm to divide by a 2-digit divisor. • Students will use multiplication to check answers to division problems.
Lesson 5	Multistep Story Problems	• Students will solve multistep story problems involving whole numbers and the four operations.

▸ **Using the Division Algorithm**
▸ **The Relation between Division and Multiplication**

Learn ❶ The Division algorithm

The price of 25 similar toys is 5,325 pounds. If you want to know the price of each toy,

you can divide $\boxed{5{,}325 \div 25 \quad \text{or} \quad 25\overline{)5{,}325}}$

You can use the division algorithm strategy.

Step 1	**Step 2**
$\begin{array}{r} 0\phantom{{,}325} \\ 25\overline{)5{,}325} \end{array}$ • Divide $5 \div 25$ but $5 < 25$ then write 0 over 5	$\begin{array}{r} 02\phantom{{,}5} \\ 25\overline{)5{,}325} \\ -\ 50 \\ \hline 3 \end{array}$ • Divide $53 \div 25$ • Write 2 over 3 • Multiply $2 \times 25 = 50$ • Write 50 under 53 • Subtract $53 - 50$ • Compare $3 < 25$

Step 3	**Step 4**
$\begin{array}{r} 021 \\ 25\overline{)5{,}325} \\ -\ 50 \\ \hline 32 \\ -\ 25 \\ \hline 7 \end{array}$ • Bring down the tens (2) • Divide $32 \div 25$ • Write 1 over 2 • Multiply $1 \times 25 = 25$ • Write 25 under 32 • Subtract $32 - 25$ • Compare $7 < 25$	$\begin{array}{r} 0213 \\ 25\overline{)5{,}325} \\ -\ 50 \\ \hline 32 \\ -\ 25 \\ \hline 75 \\ -\ 75 \\ \hline 00 \end{array}$ • Bring down the ones (5) • Divide $75 \div 25$ • Write 3 over 5 • Multiply $3 \times 25 = 75$ • Write 75 under 75 • Subtract $75 - 75$ • Compare $0 < 25$

Draft
You can use this draft to estimate the result of dividing by 25
$1 \times 25 = 25$
$2 \times 25 = 50$
$\boxed{53} \leftarrow$
$3 \times 25 = 75$
$4 \times 25 = 100$

Note
53 lies between 50 and 75
So, we take 2 when dividing 53 by 25

, then the price of each toy is 213 pounds.

Notes for parents :
• To help your child remember all steps in the division algorithm, let him/her use the following mnemonic or make up one of his/her own: Don't Make Silly Careless Blunders (Divide, Multiply, Subtract, Compare, Bring Down).

▶ **Other Examples :**

a. With a remainder $3,594 \div 19$

```
       189
   19)3,594
    - 19↓
      169
    - 152↓
      174
    -  171
        3
```

The order of division
is as follows:

Divide
Multiply
Subtract
Compare
Bring down

Repeat this order
until the division
is complete.

Draft

$19 \times 1 = 19$

$\boxed{35}$

$19 \times 2 = 38$

$19 \times 3 = 57$

$19 \times 4 = 76$

$19 \times 5 = 95$

$19 \times 6 = 114$

$19 \times 7 = 133$

$19 \times 8 = 152$

$\boxed{169}$

$19 \times 9 = 171$

$\boxed{174}$

🌏 **Remember**

The remainder
should always be
less than the divisor.

$3 < 19$

▸ then $3,594 \div 19 = 189$ R3

b. Zero in the quotient $4,316 \div 42$

Step 1	Step 2
``` 0 42)4,316 ``` • Divide $4 \div 42$ $4 < 42$ then write 0 over 4	``` 01 42)4,316 - 42 1 ``` • Divide $43 \div 42$ • Write 1 over 3 • Multiply $1 \times 42 = 42$ • Write 42 under 43 • Subtract $43 - 42$ • Compare $1 < 42$

Step 3	Step 4
``` 0 10 42)4,316 - 42↓ 11 - 0 11 ``` • Bring down the tens (1) • $11 < 42$, you cannot divide. • Write a 0 over 1.	``` 0102 42)4,316 - 42 11 - 0↓ 116 - 84 32 ``` • Bring down the ones(6) • Divide $116 \div 42$ • Write 2 over 6 • Multiply $2 \times 42 = 84$ • Write 84 under 116 • Subtract $116 - 84$ • Compare $32 < 42$

Draft

$42 \times 1 = 42$

$\boxed{43}$

$42 \times 2 = 84$

$\boxed{116}$

$42 \times 3 = 126$

▸ then $4,316 \div 42 = 102$ R 32

Notes for parents :

• Remind your child of including the remainder as a part of the answer

Example 1

Divide by using the standard algorithm.

a. $5,850 \div 26$

b. $4,995 \div 14$

Solution 💡

a.
```
        225
   26)5,850
    - 52↓
       65
    -  52↓
      130
    - 130
      000   [0 < 26]
```

, then $5,850 \div 26 = 225$

b.
```
        356
   14)4,995
    - 42↓
       79
    -  70↓
       95
    -  84
       11   [11 < 14]
```

, then $4,995 \div 14 = 356$ R 11

✓ check your understanding

Divide.

a. $1,716 \div 12$

b. $21\overline{)5,315}$

c. $24\overline{)5,034}$

• Remind your child to start division from the left.

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Learn ② The relation between division and multiplication.

You can use the idea that multiplication and division are inverse operations. Multiply the quotient by the divisor. Then add the remainder. The sum should equal the dividend.

$$Dividend = (Quotient \times Divisor) + Remainder$$

The check for example 1 is shown below.

a. $5,850 \div 26 = 225$

Check

```
      2 2 5  ← Quotient
  ×     2 6  ← Divisor
    1, 3 5 0
  + 4, 5 0 0
    5, 8 5 0  ← Dividend
```

✓

Dividend = Quotient × Divisor

b. $4,995 \div 14 = 356$ R11

Check

```
        3 5 6  ← Quotient
  ×       1 4  ← Divisor
      1, 4 2 4
    + 3, 5 6 0
      4, 9 8 4
    +     1 1  ← Remainder
      4, 9 9 5  ← Dividend
```

✓

Dividend = (Quotient × Divisor) + Remainder

Example 2

Divide $14\overline{)1,697}$, then check your quotient with multiplication.

Solution 💡

```
        1 2 1
  14)1, 6 9 7
    - 1 4▾
       2 9
     -  2 8▾
        1 7
      - 1 4
         3
```

Check

```
        1 2 1  ← Quotient
  ×       1 4  ← Divisor
        4 8 4
    + 1, 2 1 0
      1, 6 9 4
    +       3  ← Remainder
      1, 6 9 7  ← Dividend
```

✓

✓ check your understanding

Divide $2,916 \div 12$, then multiply to check your answer.

Notes for parents :
‹ Help your child check his/her answer with multiplication.

176

● REMEMBER   ● UNDERSTAND   ○ APPLY   ♣ PROBLEM SOLVING | 🕮 From the school book

1. Divide using the standard algorithm for division.

a. 🕮 $32\overline{)192}$

b. 🕮 $22\overline{)756}$

c. 🕮 $43\overline{)1,376}$

d. 🕮 $65\overline{)543}$

e. 🕮 $46\overline{)8,014}$

f. $25\overline{)547}$

g. $18\overline{)5,009}$

h. $81\overline{)9,567}$

I. $11\overline{)6,203}$

j. $48\overline{)1,974}$

k. $29\overline{)725}$

l. $57\overline{)5,262}$

m. $15\overline{)5,314}$

n. $15\overline{)1,515}$

o. $18\overline{)1,818}$

2. Solve the following problems. Check your answer.

a. $1,116 \div 12$

b. $4,609 \div 13$

c. $3,675 \div 25$

d. $4,251 \div 34$

e. $9,036 \div 36$

f. $5,356 \div 52$

3. Compare using (< , = or >).

a. $4,216 \div 34$ ◯ 126

b. $9,225 \div 45$ ◯ $200 + 5$

c. $16,002 \div 63$ ◯ 2×130

d. $9,050 \div 25$ ◯ $300 + 52$

e. $23,112 \div 72$ ◯ 3×120

f. $14,640 \div 61$ ◯ 20×12

4. A school distributed 840 books among 15 classes equally , find number books in each class ?

[E. Monofia – Shiben El Kom 23]

5. A hotel consists of 180 rooms divided into some equal floors. Every floor has 15 rooms. Find the number of floors.

[El Beheira – Housh Essa 23]

178

6. 🔲 Solve the problems using the standard algorithm. Check your work using an area model.

a. At her cafe, Rana sells cookies baked by a local bakery. She receives an order of 350 cookies. Rana packages the cookies in groups of 12 cookies per bag. Solve to find how many full bags containing 12 cookies each, Rana can sell from her order of 350 cookies and how many cookies are left over.

b. How could Rana package the cookies so that each bag contains the same number of cookies and she has none left over?

7. 🔲 Ziad works in a clothing factory that produces shirts. He has 100 buttons and needs 16 buttons for each shirt After dividing, he thinks he has enough to make 6 shirts and will have 4 buttons left over. Is Ziad correct in his thinking? Why or why not? Explain your thinking.

🟡 Challenge

8. Complete.

If $5,528 \div A = 15$ R8, then $A \times 15 -$ ─────────

Choose the correct answer.

1. If $3,012 \div 12 = 251$, then $251 \times 12 =$ [Giza 23]
- A. 3.012
- B. 3,012
- C. 3,014
- D. 3,015

2. The division equation that matches $125 \times 36 = 4,500$ is —————
- A. $4,500 - 125 = 36$
- B. $125 \div 36 = 4,500$
- C. $4,500 \div 36 = 125$
- D. $125 + 36 = 4,500$

3. Which expression can be used to check the solution of the following division problem?

$8,668 \div 24 = 361 \, R \, 4$
- A. 24×361
- B. $28 \times 8,668$
- C. $361 \times 4 + 24$
- D. $24 \times 361 + 4$

4. Quotient of $7,668 \div 54$ is   [E. Monofia – Shiben El Kom 23]
- A. 142
- B. 124
- C. 214
- D. 241

5. What is the value of M in the opposite division problem?

$$15\overline{)5,130}^{\,M}$$
- A. 324
- B. 342
- C. 234
- D. 432

6. $9,363 \div 31 =$
- A. 302 R 1
- B. 302 R 2
- C. 302
- D. 302 R 4

7. $8,283 \div 33 =$
- A. 25
- B. 215
- C. 512
- D. 251

8. If $26 \times 352 = 9,152$, then $9,155 \div 26 =$
- A. 352
- B. 352 R 1
- C. 352 R 2
- D. 352 R 3

(El Monofia – Tala 23) [Giza – Awseem 23]

9. If $7,785 \div 31 = 251 \, R \, 4$, then $31 \times 251 + 3 =$
- A. 7,786
- B. 7,785
- C. 7,784
- D. 7,783

10. A car its length 196 cm, a factory design a car sample its length 4 cm. How many times the car longer than the car sample?
- A. 47
- B. 48
- C. 49
- D. 94

(El Katyoubia 23)

180

Multistep Story Problems

Learn How to solve multistep story problems ?

Here are some guided steps you may use
when solving problems.

Read to understand

- Read the story loudly more than one time
  carefully.
- Identify the details and quantities given.
- Identify the hidden question (if exists).
- Search for key words.

Plan

- Decide the operation (+ ,— ,× ,÷).
- Decide the strategy you can use to solve
  the problem.

Solve

- Solve the hidden question (if exists).
- How can you use the strategy to solve
  the problem ?

Check

- How do you know your answer is correct ?
- What other strategy could you use to solve
  the problem ?

Example 1

In one year, a school used 15,730 red papers, 3,960 fewer blue
papers than red papers, and 4,510 fewer green papers than blue
papers.
How many papers were used in all ?

Notes for parents :
- Remind your child that multistep problem is a problem that involves more than one
  operation.

181

Solution

Red	15,730	
Blue	—— 3,960 ——	Total?
Green	—4,510—	

Blue	Green	Total
14	0 11	1 1 1
4 ~~15~~	~~11~~,770	15, 7 3 0
1 5, 7 3 0	— 4, 5 1 0	+ 1 1, 7 7 0
— 3, 9 6 0	7, 2 6 0	+ 7, 2 6 0
1 1, 7 7 0		3 4, 7 6 0

The school used 34,760 papers in all.

Example 2

Hany and his father are going on a road trip to his grandfather's house, which is 700 km away.
On the first day, they travel 253 km. On the second day, they travel 307 km. How many kilometers will they need to travel to reach his grandfather's house?

Solution

The left distance after the first day = $700 - 253 = 447$ km.

The left distance after the second day = $447 - 307 = 140$ km.

then, they need to travel 140 km to reach the grandfather's house.

Example 3

Ashraf has 1,578 L.E. He bought a book for 52 L.E., and by the left money he bought 14 shirts of the same kind. What is the cost of each shirt?

$$
\begin{array}{r}
109 \\
14\overline{)1,526} \\
-\ 14 \\
\hline
126 \\
-\ 126 \\
\hline
0
\end{array}
$$

Solution

The left money = $1,578 - 52 = 1,526$ L.E.

The cost of each shirt = $1,526 \div 14 = 109$ L.E.

Notes for parents :

• Some story problems have hidden question or questions that must be answered before you can solve the problem. You have to determine what operation to use and what strategies will you use to help you figure out how to solve the problem.

182

Example 4

Amany wants to buy 150 m of cloth and there are two different kinds of the cloth. If the price of each 50 m from the first kind is 1,000 L.E. and the price of each 30 m from the second kind is 500 L.E.

How much money will be saved by buying the second kind?

Solution 💡

First kind : [1,000] [1,000] [1,000]
     50 m   50 m   50 m

The price of the first kind = 1,000 + 1,000 + 1,000 = 3,000 L.E.

Second kind : [500] [500] [500] [500] [500]
      30 m   30 m   30 m   30 m   30 m

The price of the second kind = $500 \times 5 = 2,500$ L.E.

The saved money = $3,000 - 2,500 = 500$ L.E.

✅ check your understanding

Amgad saved 550 pounds, Bassem saved 3 times as much as Amgad and Sameh saved 900 pounds more than Agmd. How many pounds were saved by all of them ?

_____ _____ _____ _____

_____ _____ _____ _____ _____

* Ask your child to read the problem carefully and plan to solve it, then ask him/her to look back to check his/her answer.

Multistep Story Problems

1. A baker made 140 servings of baklava for a party. If each baking tray holds 12 servings of baklava, how many trays will be needed to hold all the baklava ?

2 Mom baked a batch of 12 balah el sham. Two balah el sham fell on the floor. If 4 children split the remaining balah el sham equally, how many balah el sham will each child get ?

3. In one year, a textile factory used 11,650 meters of cotton, 4,950 fewer meters of silk than cotton, and 3,500 fewer meters of wool than silk. How many meters of fabric were used in all ?

4. An architect is designing a bridge. The architect has two choices for materials. Mighty Steel sells 5 metric tons (t) of steel for 100,000 L.E. Silver Strong Steel sells 3 t of steel for 70,000 L.E. If the architect needs 15 t of steel, how much money will be saved by purchasing from Mighty Steel ?

5. Computer Depot sold 762 reams of paper. Paper Palace sold 3 times as much paper as Computer Depot and 143 reams more than Office Supply Central. How many reams of paper were sold by all three stores combined ?

6. (.) Zeinab ordered 12 packages of fabric squares to make a quilt. Each package has 18 fabric squares, and Zeinab used all the squares for her quilt. Reem made a quilt that was 13 squares wide by 13 squares long. How many fewer squares did Reem use than Zeinab for her quilt?

7. (.) Nagi sold a total of 30 boxes of sports T-shirts at his store on Monday. These boxes contained only basketball T-shirts and football T-shirts. Each box contained 25 sports T-shirts. He earned 3 L.E. for each sports T-shirt he sold. He earned a total of 1,134 L.E. from the football T-shirts he sold. How much money did Nagi earn from the basketball T-shirts he sold?

8. (.) Malek and his family are going on a road trip to his grandmother's house, which is 465 kilometers away. On Friday, they traveled 124 km. On Saturday, they traveled 210 km. How many kilometers will they need to travel on Sunday to reach his grandmother's house?

9. There are 1,354 animals in one barn. There are 574 goats, 346 cows and the rest are horses. If 89 horses were sold, how many horses are left in that barn?

10. Amgad has 238 eggs in the warehouse. He collected another 122 eggs from his chickens yesterday. As he arranged all the eggs in trays, he accidentally dropped 28 eggs on the ground. How many unbroken eggs were left? Among the eggs left, there were 126 brown eggs; How many were white eggs?

185

TEST

1. Choose the correct answer:

a. In the division equation $4,235 \div 35 = 121$, the divisor is

    A. 4,236   **B.** 35   **C.** 121   **D.** 1

b. Using the opposite area model to divide $3,084 \div 12$, then the value of X is

	100	100	X	7
12	3,084	1,884	684	84
	− 1,200	− 1,200	− 600	− 84
	1,884	684	84	00

    A. 100   **B.** 50

    C. 10   **D.** 5

c. By using the following area model to divide, then the suitable division equation is

    A. $1,456 \div 13 = 1,102$

    B. $1,456 \div 13 = 211$

    C. $1,456 \div 13 = 112$

    D. $100,102 \div 13 = 1,456$

	100	10	1	1
13	1,456	156	26	13
	− 1,300	− 130	− 13	− 13
	156	26	13	00

d. If $3,012 \div 12 = 251$, then $251 \times 12 = $ _____ [Giza 23]

    A. 3,013   **B.** 3,012   **C.** 3,014   **D.** 3,015

e. If $14 \times 365 = 5,110$, then $5,111 \div 14 = $ _____

    A. 365 R11   **B.** 365   **C.** 365 R1   **D.** 365 R15

f. $3,681 \div 35 = 105$ R _____

    A. 3   **B.** 4   **C.** 5   **D.** 6

g. $1,212 \div 12 = $ _____ [Alexandria – First Montaza 23]

    A. 12   **B.** 11   **C.** 101   **D.** 1,001

2. Complete the following.

a. $3,915 \div 15 = $ _____

b. If the price of 16 books is 560 pounds, then the price of each book equals _____ pounds.

c. Quotient × divisor + remainder = _____

d. $3,561 \div 1 = $ _____

e. $0 \div 51,362 = $ _____

f. $120 \div 20 = $ _____ [Aswan – Kom Ombo 23]

186

g. The quotient in opposite area model is ——

$$\div 35 \quad \begin{array}{|c|c|} \hline & 60 & 4 \\ \hline 2{,}240 & 140 \\ -2{,}100 & -140 \\ \hline 140 & 000 \\ \hline \end{array}$$

(El Monofia – Shiben El Kom 23)

h. The quotient of $54 \div 5 = 10$, then the remainder is

(Giza – Abo El Nomros 23)

3. Choose the correct answer.

a. The remainder in the equation $36 \div 9 = 4$ is

  A. 36   B. 9   C. 4   D. zero

b. A man bought 12 toys for 288 L.E. , then the price of each toy is ——— L.E.

  A. 300   B. 24   C. 276   D. 42

c. $3{,}124 \div 3{,}124 = $ ———

  A. 3,124   B. zero   C. 124   D. 1

                                                       (Cairo – E. Nouzha 23)

d. If $4{,}150 \div 29 = 143$ R

  A. 4   B. 2   C. 1   D. 3

e. The divisor in $36 \div 7 - 5$ R 1 is

                                                       (Ismailia 23)

  A. 36   B. 7   C. 5   D. 1

f. If $840 \div 24 = 35$, then $35 \times 24 + 5 = $ ———

  A. 840   B. 850   C. 845   D. 485

g. Using the opposite area model to divide $1{,}530 \div X$, then the value of X is ———

$$X \quad \begin{array}{|c|c|} \hline & 100 & 2 \\ \hline 1{,}530 & 30 \\ 1{,}500 & -30 \\ \hline 30 & 00 \\ \hline \end{array}$$

  A. 1,530   B. 102

  C. 30   D. 15

4. Answer the following questions.

1. Divide $57)\overline{5{,}2\ 6\ 2}$ "using the standard algorithm"

2. Divide $6{,}203 \div 11$ "using the area model"

3. A teacher wants to distribute 420 prizes to 7 classes equally.
   How many prizes per each class ?   (El Menia – Deir Mawas 23)

4. There were 29 girls and 27 boys in a class. The teacher asked them to work in groups of 8
   How many groups there were ?   (Cairo – El Marg 23)

187

UNIT

5

Multiplication and Division with Decimals

▶ **Concept 1 :**
Multiplying Decimals

▶ **Concept 2 :**
Dividing Decimals

Fast Fact

Saturn is the second largest planet in our solar system. Saturn orbits the Sun at an average speed of 10 km per second. The average orbital speed of Earth is 1.1 times as fast as Saturn's speed. How fast does Earth orbit the Sun?

Multiplying Decimals
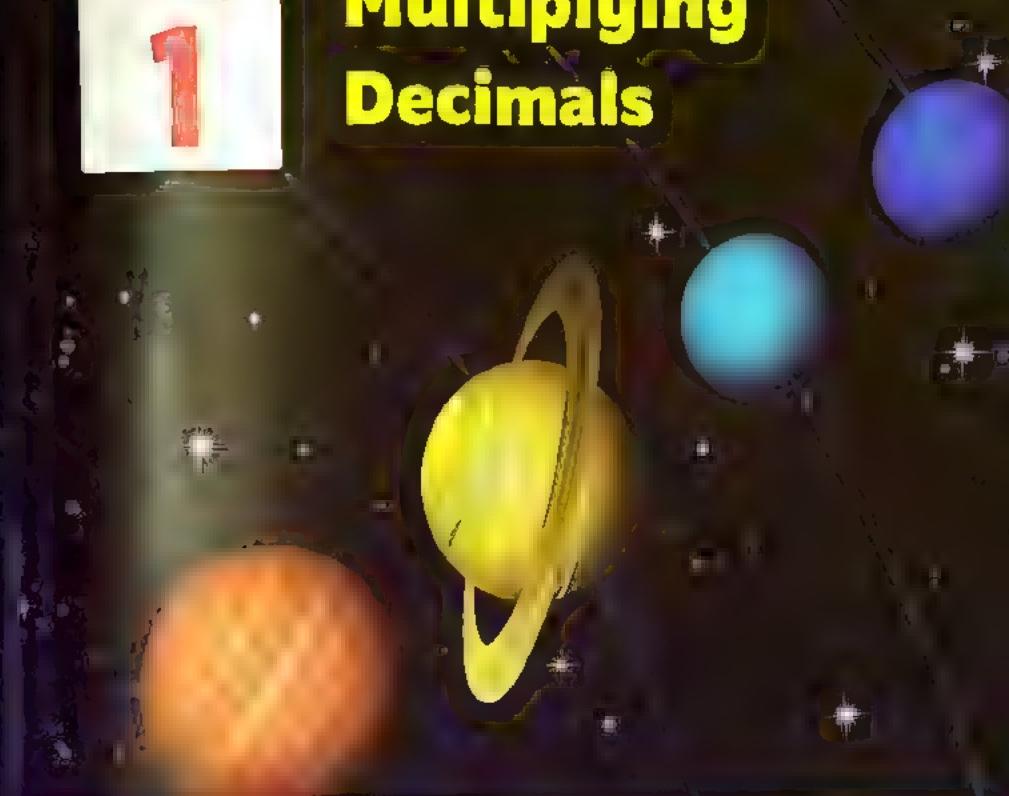
Lessons 1 to 3	Multiplying by Powers of Ten	• Students will explain patterns when multiplying whole numbers by powers of ten.
	Multiplying Decimals by Whole Numbers	• Students will multiply a decimal by a whole number
	Multiplying Tenths by Tenths	• Students will use models to represent decimal multiplication. • Students will explain patterns when multiplying tenths by tenths.
Lesson 4	Multiply Decimals Using the Area of a Rectangle Model	• Students will use the area model to multiply decimals.
Lessons 5&6	Multiplying Decimals through the Hundredths Place	• Students will use the standard algorithm to multiply decimals through the Hundredths place.
	Multiplying Decimals through the Thousandths Place	• Students will use the standard algorithm to multiply decimals through the Thousandths place.
Lessons 7&8	Decimals and the Metric System	• Students will explain relationships between the metric system and decimals. • Students will use decimals to represent equivalent measurements.
	Measurement, Decimals and Powers of Ten	• Students will relate converting measurements in the metric system to multiplying by powers of ten.
Lesson 9	Solving Multistep Story Problems	• Students will solve multistep story problems involving addition, subtraction, and multiplication of decimals.

- Multiplying by Powers of Ten
- Multiplying Decimals by Whole Numbers
- Multiplying Tenths by Tenths

Learn ❶ Multiplying by powers of ten

Rules

| To multiply by | 10 / 100 / 1,000 | move the decimal point | 1 place / 2 places / 3 places | to the (right) |

| To multiply by | 0.1 / 0.01 / 0.001 | move the decimal point | 1 place / 2 places / 3 places | to the (left) |
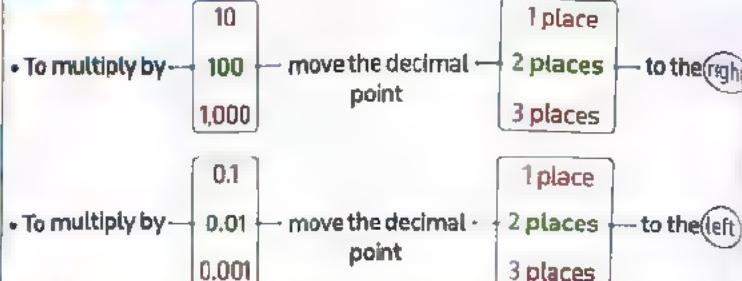
Examples for multiplying by 10, 100 and 1,000

- $1.524 \times 10 = 15.24$
- $1.524 \times 100 = 152.4$
- $1.524 \times 1,000 = 1,524$

Hint
You don't need to show a decimal point at the end of a whole number.

Examples for multiplying by 0.1, 0.01 and 0.001

- $361.8 \times 0.1 = 36.18$
- $361.8 \times 0.01 = 3.618$
- $361.8 \times 0.001 = 0.3618$

Hint
This decimal has 4 decimal places. It is a decimal at Ten-Thousandths.

Remarks

▶ Sometimes you need to put one or more zeroes on the right (or on the left) of the number without changing its value.

For Example:

- 3.7×100
  $= 3.70 \times 100 = 370$

- $3.7 \times 1,000$
  $= 3.700 \times 1,000 = 3,700$

- 16.3×0.001
  $= 0016.3 \times 0.001$
  $= 0.0163$

▶ In the whole numbers, consider the decimal point at the right of Ones place (as: 35. , 645.)

For Example:

$450.0 \times 0.01 = 4.50 = 4.5$

Notes for parents :

- Your child may be confused which direction to move the decimal point when multiplying decimal numbers.

$1.524 \times 10 = \bigcirc$

$1.524 \times 100 = \bigcirc$

$1.524 \times 1,000 = \bigcirc$

Example 1

Find the result of each of the following.

a.
75.42 × 10 =	75.42 × 0.1 =
75.42 × 100 =	75.42 × 0.01 = _____
75.42 × 1000 =	75.42 × 0.001 = _____

b.
39 × 10 = _____	39 × 0.1 = _____
39 × 100 – _____	39 × 0.01 = _____
39 × 1,000 = _____	39 × 0.001 = _____

Solution 💡

a.
75.42 × 10 = 754.2	75.42 × 0.1 = 7.542
75.42 × 100 – 7,542	075.42 × 0.01 = 0.7542
75.420 × 1,000 = 75,420	0.075.42 × 0.001 = 0.07542

b.
39.0 × 10 = 390	39 × 0.1 = 3.9
39.00 × 100 = 3,900	0.39 × 0.01 = 0.39
39.000 × 1,000 = 39,000	0.039 × 0.001 = 0.039

Note that

0.07542

- 4 is in the Ten Thousandths place.
- 2 is in the Hundred Thousandths place.

✓ check your understanding

Find the result of each of the following.

a. 57.32 × 0.1 =

b. 0.0823 × 1,000 = _____

c. 18 × 0.001 = _____

d. 0.524 × 10 = _____

e. 5.3 × 0.01 = _____

f. 62 × 100 = _____

* Make sure that your child put more zeroes if needed when multiplying by powers of ten.

191

Learn ② Multiplying decimals by whole numbers

How to evaluate : 0.4 × 3 ?

You can solve this problem in many ways as the following.

First Way

0.4 × 3 = 4 tenths × 3

= 12 tenths

= $\frac{12}{10}$ = 1.2

Second Way

Multiply: $\begin{array}{r} 4 \\ \times\ 3 \\ \hline 12 \end{array}$, then $\begin{array}{r} 0.4 \\ \times\ 3 \\ \hline 1.2 \end{array}$ → 1 decimal place → 1 decimal place

Third Way

Use the rule of

The multiplication can be represented as repeated addition

So, 0.4 × 3 = 0.4 + 0.4 + 0.4 = 1.2

You can use the number line to show that:

Example 2

Complete.

a. 0.5 × 5 = ——————

b. 05 × 6 = ——————

c. 3.5 × 3 = ——————

d. 0.45 × 5 = ——————

e. 0.015 × 9 = ——————

f. 4.15 × 12 = ——————

Solution 💡

a. Since 5 × 5 = 25 , then 0.5 × 5 = 2.5

b. Since 5 × 6 = 30 , then 0.5 × 6 = 3.0 = 3

c. Since 35 × 3 = 105 , then 3.5 × 3 = 10.5

d. Since 45 × 5 = 225 , then 0.45 × 5 = 2.25

e. Since 15 × 9 = 135 , then 0.015 × 9 = 0.135

f. Since 415 × 12 = 4,980 , then 4.15 × 12 = 49.80 = 49.8

Notes for parents :

▪ Tell your child that multiplying decimals by a whole number is the same as multiplying whole numbers. He/She need to place a decimal point in his/her answer

192

Example 3

Find the value of each letter in each of the following :

a. $3,245.8 = 3 \times [A] + 2 \times [B] + 4 (C) + 5 + 8 (D)$

b. $30,604.07 - 3 \times [A] + 6 \times [B] + 4 + 7 \times [C]$

Solution 💡

a. $3,245.8 = 3,000 + 200 + 40 + 5 + 0.8$ [expanded form]

$\qquad = 3 \times (1,000) + 2 \times (100) + 4 \times (10) + 5 + 8 \times (0.1)$

, then $A = 1,000$, $B = 100$, $C = 10$, $D = 0.1$

b. $30,604.07 - 30,000 + 600 + 4 + 0.07$

$\qquad = 3 \times (10,000) + 6 \times (100) + 4 + 7 \times (0.01)$

, then $A = 10,000$, $B = 100$, $C = 0.01$

✅ Check your understanding

Complete.

a. $7.5 \times 3 =$ _____

b. $7.5 \times 6 =$ _____

c. $6.05 \times 5 =$ _____

d. $0.74 \times 9 =$ _____

e. $5.68 \times 7 =$ _____

f. $7.2 \times 12 =$ _____

* Remind your child how he/she can write a decimal in expanded form.

193

Learn ③ Multiplying tenths by tenths (with arrays)

Example : How to evaluate : 0.4×0.3 ?

12 hundredths

3 tenths

- Use two different colors to create this model :

  - The first number (0.4) is represented by coloring 4 columns by blue.

  - The other number (0.3) is represented by coloring 3 rows by yellow.

  4 tenths

  - Count the squares colored twice in the array you created that they are 12 squares = 12 hundredths

    So, $0.4 \times 0.3 = 0.12$
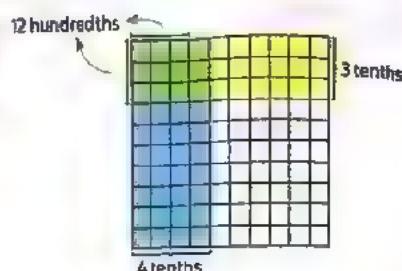
Note that

Product of two numbers in the tenths place would have a product in the hundredths place.

Example 4

Find each of the following using arrays.

a. 0.1×0.1

b. 0.5×0.2

Solution 💡

a. 1 hundredth

1 tenth

1 tenth

$0.1 \times 0.1 = 0.01$

b. 10 hundredths
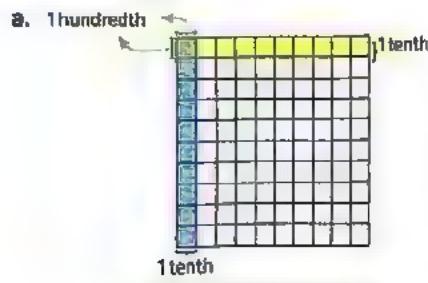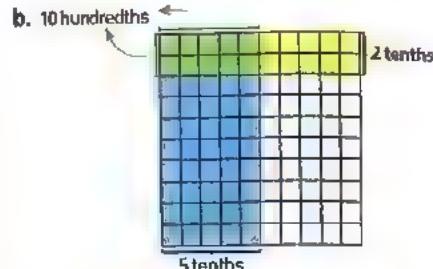
2 tenths

5 tenths

$0.5 \times 0.2 = 0.10 = 0.1$

Notes for parents :

• Let your child use models to represent 0.7×0.6

● REMEMBER   ● UNDERSTAND   ○ APPLY   ♣ PROBLEM SOLVING   📖 From the school book

1. Complete.

a. $0.643 \times 100 = $ _____

b. 📖 $4.2 \times 10 = $ _____

c. $3.29 \times 10 = $ _____

d. $12.65 \times 10 = $ _____

e. 📖 $1.245 \times 100 = $ _____

f. 📖 $360 \times 0.1 = $ _____

g. $0.045 \times 100 = $ _____

h. $3.2172 \times 1,000 = $ _____

i. $0.341 \times 1,000 = $ _____

j. $1,000 \times 6.7 = $ _____

k. 📖 $14.14 \times 0.1 = $ _____

l. 📖 $7.4 \times 0.01 = $ _____

m. $4,215 \times 0.001 = $

n. $26.71 \times 0.1 = $ _____

o. 📖 $602.1 \times 0.01 = $ _____

p. $42.5 \times 0.001 = $ _____

2. 📖 Multiply to complete the table.

×	3	30	300
0.001	a.	g. _____	m. _____
0.01	b. _____	h. _____	n. _____
0.1	c. _____	i. _____	o. _____
1	d. _____	j. _____	p _____
10	e. _____	k. _____	q _____
100	f. _____	l. _____	r. _____

3. Find each of the following.

a. 📖
$$\begin{array}{r} 2.5 \\ \times\ \ \ 3 \\ \hline \end{array}$$

b. 📖
$$\begin{array}{r} 0.35 \\ \times\ \ \ \ 5 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 4.4 \\ \times\ \ \ 6 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 0.65 \\ \times\ \ \ \ 7 \\ \hline \end{array}$$

195

4. Complete each table.

a.
$14.96 \times 1,000 =$ ——

$14.96 \times 100 =$

$14.96 \times 10 =$

$14.96 \times 1 =$

$14.96 \times 0.1 =$

$14.96 \times 0.01 =$

$14.96 \times 0.001 =$ ———

b.
$25 \times 1,000 =$

$25 \times 100 =$

$25 \times 10 =$

$25 \times 1 =$

$25 \times 0.1 =$

$25 \times 0.01 =$ ——

$25 \times 0.001 =$

c.
$5.7 \times 1,000 =$ ——

$5.7 \times 100 =$ ——

$5.7 \times 10 =$ ——

$5.7 \times 1 =$ ——

$5.7 \times 0.1 =$ ——

$5.7 \times 0.01 =$ ——

$5.7 \times 0.001 =$ ——

5. By using the number line evaluate each of the following.

a. 0.3×3

```
0        1        2        3
```

b. 0.3×4

```
0        1        2        3
```

c. 0.3×5

```
0        1        2        3
```

6. Use the base 10 grids to find the products.

a. $0.1 \times 0.1 =$ ——
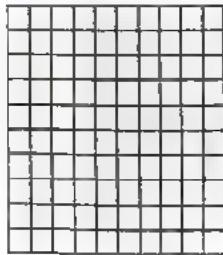
b. $0.3 \times 0.4 =$ ——
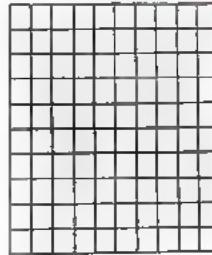
c. $0.5 \times 0.2 =$ ——
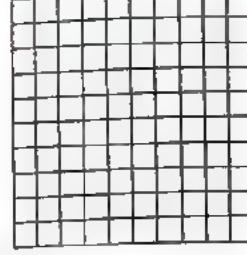
d. $0.9 \times 0.5 =$ ——
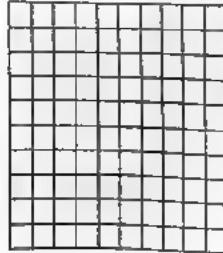
e. $0.7 \times 0.8 =$ ——
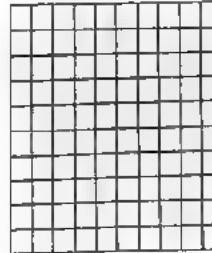
f. $0.5 \times 0.6 =$ ——
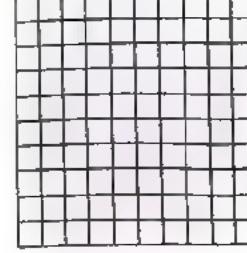
7. **Find the unknown letters in each of the following.**

a. $496 = 4 \times [A] + 9 \times [B] + 6$

b. $6{,}140 = 6 \times [C] + 1 \times [D] + 4 \times [E]$

c. $20{,}403 = 2 \times [F] + 4 \times [G] + 3$

d. $78{,}594 = 7 \times [H] + 8 \times [I] + 5 \times [J] + 9 \times [K] + 4$

e. $8{,}032 \times 1{,}000 = [L]$

f. $54.29 = 5 \times [M] + 4 + 2 \times [N] + 9 \times [O]$

g. $4.005 = 4 + 5 \times [P]$

h. $305.09 = 3 \times [Q] + 5 + 9 \times [R]$

8. **Put the suitable relation ($<$ or $=$ or $>$).**

a. 4.72×10 ◯ 0.472×100

b. 4.4×0.1 ◯ 0.044×10

c. 72.15×10 ◯ $0.07215 \times 1{,}000$

d. 5×0.001 ◯ 0.05×0.01

e. 2.4×10 ◯ 0.24×100

f. $6.08 \times 1{,}000$ ◯ 60.8×10

g. 3.251×100 ◯ 325.1×100

h. 9.15×100 ◯ 91.5×100

9. **Complete.**

a. $25.69 \times \underline{\qquad} - 256.9$

b. $4.321 \times \underline{\qquad} = 4{,}321$

c. $\underline{\qquad} \times 2.54 = 0.254$

d. $7.5 \times \underline{\qquad} = 750$

e. $2.63 \times \underline{\qquad} = 2{,}630$

f. $620.1 \times \underline{\qquad} = 0.6201$

g. $55.423 \times \underline{\qquad} = 5{,}542.3$

h. $0.021 \times \underline{\qquad} = 21$

i. $\underline{\qquad} \times 10 = 29.4$

j. $\underline{\qquad} \times 100 = 25.5$

k. $(72.12 + 2.7) \times 10 = \underline{\qquad}$

l. $(72.5 - 63.721) \times 1{,}000 = \underline{\qquad}$

10. **If $326 \times 7 = 2{,}282$ and $37 \times 52 = 1{,}924$, then complete the following without multiplying.**

a. $3.26 \times 7 = \underline{\qquad}$

b. $0.0326 \times 7 = \underline{\qquad}$

c. $32.6 \times 7 = \underline{\qquad}$

d. $3.7 \times 52 = \underline{\qquad}$

e. $0.37 \times 52 = \underline{\qquad}$

f. $0.326 \times 7 = \underline{\qquad}$

g. $0.0037 \times 52 = \underline{\qquad}$

h. $37 \times 5.2 = \underline{\qquad}$

i. $0.00326 \times 7 = \underline{\qquad}$

11. Hoda's stride is 0.72 meters. How far, in meters, will Hoda walk after taking 1,000 stride ? Use words and numbers to explain how you found your answer.

Choose the correct answer.

1. $0.067 \times 1,000 =$

   A. 6.7   B. 67

   C. 0.067   D. 670

2. $98.7 \times 100 =$ ———

   A. 987   B. 9,870

   C. 0.987   D. 0.0987

3. $85.3 \times 0.01 =$ (Cairo El Sherouk 23)

   A. 853   B. 8.53

   C. 0.853   D. 85.03

4. $35.2 \times \frac{1}{10} =$ (Giza - El Agouza 23)

   A. 35.20   B. 35.02

   C. 3.52   D. 3052

5. 2 Thousandths $\times 4 =$

   A. 8   B. 0.8

   C. 0.08   D. 0.008

(Cairo - El Nouzha 23, Giza - Math inspection 23)

6. 3 × 2 Hundredths = ———

   A. 600   B. 0.6

   C. 0.06   D. 0.006

7. $100 \times$ ——— $= 4.4$

   A. 0.44   B. 44

   C. 440   D. 0.044

8. $52.25 =$ ——— $\times 0.1$

   A. 0.5225   B. 5.225

   C. 522.5   D. 5,225

9. $2.51 \times$ ——— $= 0.251$ (ElMenofia - Tala 23)

   A. 0.1   B. 0.01

   C. 0.001   D. 10

10. $2.5 \times 3 =$ ———

   A. 75   B. 7.5

   C. 0.75   D. 0.075

11. $0.003 \times 1,000$ ☐ $30,000 \times 0.001$

   A. >   B. <   C. =

12. $0.1 \times 0.1 =$ ——— (Giza - Abo El Nomrous 23)

   A. 0.03   B. 0.02

   C. 0.01   D. 0.2

13. $6.237 \times 100 \approx$ ———

                   (to the nearest whole number)

   A. 6,237   B. 62

   C. 624   D. 623

14. $(2.35 \times 10) - 11.1 =$ ———

   A. 223.9   B. 23.5

   C. 12.4   D. 2.4

198

Multiply Decimals Using the Area of a Rectangle Model

Learn ① Using multiplication patterns

$$9 \times 4 = 36$$

So, $9 \times 400 = 3,600$	$0.9 \times 4 = 3.6$	$0.09 \times 4 = 0.36$
$90 \times 40 = 3,600$	$9 \times 0.4 = 3.6$	$0.09 \times 0.4 = 0.036$
$9 \times 40 = 360$	$0.9 \times 0.4 = 0.36$	$0.9 \times 0.04 = 0.036$
$90 \times 4 = 360$	$9 \times 0.04 = 0.36$	$0.09 \times 0.04 = 0.0036$

Note that

The number of zeroes (or decimal places) in the product must be the sum of the numbers of zeroes (or decimal places) in both initial numbers.

Example 1

Complete each of the following.

a. Given that : $26 \times 59 = 1,534$, then

1. $2.6 \times 5.9 =$
2. $0.26 \times 5.9 =$ _____
3. $0.26 \times 0.59 =$ _____
4. $26 \times 0.059 =$ _____

b. Given that : $271 \times 35 = 9,485$, then

1. $27.1 \times 35 =$ _____
2. $27.1 \times 3.5 =$ _____
3. $2.71 \times 3.5 =$ _____
4. $0.271 \times 3.5 =$ _____

Solution

a.	1. 15.34	2. 1.534	3. 0.1534	4. 1.534
b.	1. 948.5	2. 94.85	3. 9.485	4. 0.9485

✓ Check your understanding

Complete :
Given that : $12 \times 13 = 156$, then

1. $120 \times 13 =$ _____	2. $1.2 \times 1.3 =$ _____	3. $0.12 \times 1.3 =$ _____
4. $1.2 \times 13 =$ _____	5. $12 \times 0.13 =$	6. $1.2 \times 0.13 =$
7. $12 \times 1.3 =$ _____	8. $0.12 \times 13 =$ _____	9. $0.12 \times 0.13 =$

Notes for parents :
• Let your child count zeroes in the product and compare with the sum of the numbers of zeroes in the two factors.

199

Learn ② How to use the area model to multiply decimals ?

Example : How to evaluate : 1.4×7.8 ?

	1	0.4
7	7	2.8
0.8	0.8	0.32

```
      7
 +  2.  8
 +  0.  8
 +  0.  3  2
   10.  9  2
```
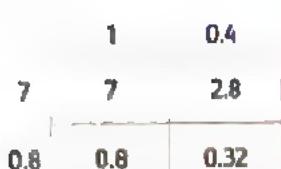
So, $1.4 \times 7.8 = 10.92$

Example : How to evaluate : 38.2×0.51 ?

	30	8	0.2
0.5	15	4	0.10
0.01	0.30	0.08	0.002
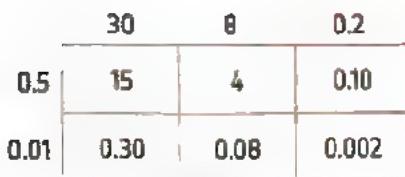
```
     15
 +   4
 +   0.  1  0
 +   0.  3  0
 +   0.  0  8
 +   0.  0  0  2
    19.  4  8  2
```

So, $38.2 \times 0.51 = 19.482$

Example 2

Find the missing number in each of the following area models, write the problem, then find the product.

a.

	40	?
60	?	180
?	200	15

____ × ____ = ____

b.

	2	0.8
5	?	?
?	0.8	0.32

____ × ____ = ____

Notes for parents :
• Remind your child how he/she multiply two whole numbers.

200

Solution 💡

a. From the area model
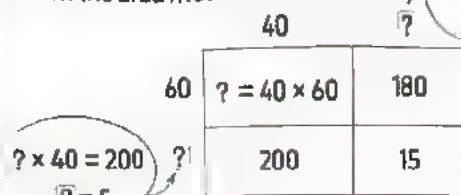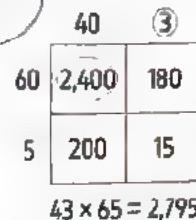
	40	?
60	? = 40 × 60	180
?¹	200	15

? × 40 = 200
?² = 5

? × 60 = 180
?² = 3

, then

	40	③
60	2,400	180
5	200	15

43 × 65 = 2,795

```
  2, 4 0 0
+    2 0 0
+    1 8 0
+       1 5
  2, 7 9 5
```

---

b.

	2	0.8
5	? = 2×5	? = 5×0.8
?¹	0.8	0.32

? × 2 = 0.8
?² = 0.4

, then

	2	0.8
5	(10)	(4)
(0.4)	0.8	0.32

2.8 × 5.4 = 15.12

```
     10
+     4
+   0. 8
+   0. 3 2
  15. 1 2
```
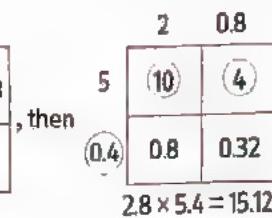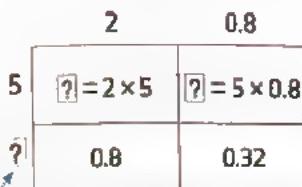
✅ check your understanding

Use the area model to complete each of the following.

a. 2.5 × 8.6 = ———

b. 8.2 × 0.53 = ———

c. 41.6 × 0.25 = ———

d.

	30	—
40	___	8
	150	1.0

___ × ___ = ___

e.

	7	0.3
4	___	___
—	2.1	0.09

___ × ___ = ___

---
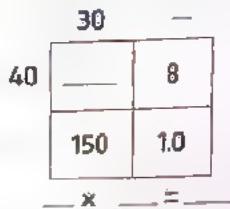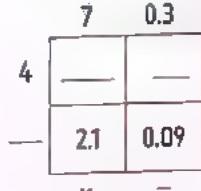
* Let your child use palce value to decompose each factor into its parts.

201

● REMEMBER   ) APPLY   ♣ PROBLEM SOLVING | ⊔ From the school book

1. Look for patterns in each set of problems. Use the patterns to complete the unanswered problems.

a.	b.	c.	d.
___ 80 × 3 = 240	18 × 42 = 756	157 × 56 = 8,792	📖 7 × 600 = 4,200
8 × 30 = 240	180 × 42 = ___	157 × 560 = ___	7 × 60 = ___
8 × 3 = ___	1.8 × 4.2 = ___	15.7 × 5.6 = ___	7 × 6 = 42
0.8 × 3 = ___	0.18 × 4.2 = ___	1.57 × 5.6 = ___	7 × 0.6 = ___
8 × 0.3 = 2.4	1.8 × 0.042 = ___	1.57 × 0.56 = ___	7 × 0.06 = 0.42
0.8 × 0.3 = ___	18 × 0.42 = ___	15.7 × 0.56 = ___	0.7 × 0.6 = ___
0.08 × 0.3 = ___	0.018 × 42 = ___	157 × 5.6 = ___	0.7 × 0.06 = ___
0.8 × 0.03 = ___	0.18 × 0.42 = ___	157 × 0.56 = ___	0.07 × 0.06 = ___
0.08 × 0.03 = ___	18 × 4.2 = ___		

2. Use an area model to complete each of the following.

a. 📖 1.3 × 6.8 = ___

```
+ ___
+ ___
+ ___
  ___
```
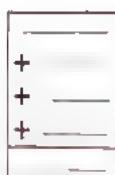
b. 📖 5.7 × 9.1 = ___

c. 📖 4.2 × 5.6 = ___

d. 8.3 × 2.6 = ___

e. 📖 7.3 × 0.49 = ___

f. 2.1 × 0.67 = ___

202

g. 📖 $29.3 \times 0.34 =$ _____

h. 📖 $3.55 \times 0.75 =$ _____

i. 📖 $18.2 \times 2.8 =$ _____

j. 📖 $70.9 \times 4.6 =$ _____

k. $1.74 \times 3.5 =$ _____   (Ismailia 23)

l. $25 \times 32.5 =$ _____   (Aswan 23)

3. Look at the area models. Some of the numbers are missing. Use the information provided to fill in the blanks. Write the problem, and then find the product.

a. 📖

	20	8
50	1,000	?
?	80	32

Produact: _____

b.

	?	6
60	1,200	360
?	80	24

Product:

c.

	30	4
50	1,500	200
?	60	?

Product: _____

d. 📖

	?	?	5
30	12,000	600	150
?	1,600	80	?

Product: _____

203

e.

	40	?
80	3,200	560
?	120	21

Product: ———

f.

	30	4	?
?	180	?	1.8
0.4	12	?	0.12

Product: ———

g.

	?	?	0.3
7	350	35	?
0.2	10	1	?

Product: ———

h.

	4	?	?
10	?	3	0.7
?	16	1.2	0.28

Product: ———

4. Complete.

a. Since $38 \times 47 = 1{,}786$, then $0.38 \times 4.7 =$ ———

b. Since $11.3 \times 4.5 = 50.85$, then $1.13 \times 45 =$ ———

c. In the opposite area model, the value of $k + x =$ ———

	2	0.7
6	k	m
x	n	0.28

d. From the opposite area model, the value of $m + n =$ ———

	1	0.3	k
x	3	m	0.21
y	n	0.15	0.035

5. 📖 Malak works for a construction company. The company had 12 pallets of cinder blocks delivered for a building project. Each pallet weighed 1.36 metric tons.

Help Malak revise and complete the area model to figure out how much the cinder blocks weighed all together.

	1	0.3	0.06
10	10	30	6
2	2	6	12

204

Multiple Choice Questions

Choose the correct answer.

1. 3×2 Thousandths = ———— Thousandths
- A. 5
- B. 6
- C. 32
- D. 23

2. 3 Tenths $\times$ 4 Tenths =
- A. 12 Tenths
- B. 12 Hundredths
- C. 12 Thousandths
- D. 12 Ones

3. The product $0.9 \times 5 =$ ————
- A. 0.45
- B. 4.5
- C. 5.4
- D. 45

4. $4.3 \times 3.4 =$ ————
- A. 14
- B. 14.02
- C. 14.62
- D. 12.62

5. $2.85 \times 4.1 =$ ————
- A. 11.085
- B. 10.685
- C. 11 685
- D. 12

6. $3.1 \times 1.1 =$ ————
- A. 34.1
- B. 341
- C. 0.341
- D. 3.41

7. Since $35 \times 47 = 1,645$

, then $3.5 \times 0.47 =$ ————
- A. 164.5
- B. 16.45
- C. 1.645
- D. 1,645

8. Since $7.5 \times 4.3 = 32.25$

, then $75 \times 0.43 =$ ——
- A. 3.225
- B. 32.25
- C. 322.5
- D. 0.3225

9. Since $9 \times 3 = 27$

, then $0.09 \times 0.3 =$ ————
- A. 0.27
- B. 0.027
- C. 2.7
- D. 0.0027

10. From the area model, m = ————

	4	0.3
2	8	0.6
0.5	m	0.15

- A. 20
- B. 0.02
- C. 0.2
- D. 2

11. If the area model of a problem is

	3	0.2
4	x	0.8
0.7	2.1	y

, then $x + y =$
- A. 12
- B. 12.14
- C. 15
- D. 15.04

12. If the area model of a problem is

	L	0.8
5	15	k
m	n	0.24

, then $L + m =$ ————
- A. 3
- B. 3.3
- C. 15.24
- D. 2014

205

Learn | **How to multiply two decimals ?**

Just follow these steps :

1. **Ignore** the decimal point in each of the two numbers, in order to obtain two whole numbers.

2. **Multiply** the two whole numbers that you obtained by using standard algorithm or area model.

3. **Add** the number of decimal places in both initial numbers.

4. **Place** the decimal point in the product found in step 2.
   The number of decimal places in the product must be the sum of the numbers of decimal places in both initial numbers.

For Example :

To multiply : 2.45×0.7 , you can follow the following steps :

1. **Ignore** the decimal point to obtain two whole numbers 245 and 7

2. **Multiply** the two whole numbers :
   $245 \times 7 = 1,715$

2.45	$\Rightarrow$ 2 decimal places
$\times\ \ 0.7$	$\Rightarrow$ 1 decimal place
1.715	$\Rightarrow$ 3 decimal places

3. **Add** the number of decimal places in both initial numbers : $2 + 1 = 3$

4. **Place** the decimal point in the product : 1.715

Example 1
Multiply.

a. 0.46×0.9

b. 21.9×4.8

c. 0.02×0.4

d. 8.124×0.47

Notes for parents ·
- Explain that the product should have as many decimal places as the sum of the decimal places in the factors.

206

Solution 💡

You can multiply decimals directly as follows :

a.
$$\begin{array}{r} 0.46 \\ \times \quad 0.9 \\ \hline 0.414 \end{array}$$
→ 2 decimal places
⟹ 1 decimal place
⟹ 3 decimal places

b.
$$\begin{array}{r} 21.9 \\ \times \quad 4.8 \\ \hline 1,752 \\ + \quad 8,760 \\ \hline 105.12 \end{array}$$
⟹ 1 decimal p.ace
⟹ 1 decimal p.ace

⟹ 2 decimal places

c.
$$\begin{array}{r} 0.02 \\ \times \quad 0.4 \\ \hline 0.008 \end{array}$$
→ 2 decimal places
⟹ 1 decimal place
⟹ 3 decimal places

Notice 🔖

We insert 2 zeroes to the left of 8 to make 3 decimal places.

d.
$$\begin{array}{r} 8.124 \\ \times \quad 0.47 \\ \hline 56,868 \\ + 324,960 \\ \hline 3.81828 \end{array}$$
⟹ 3 decimal places
⟹ 2 decimal places

⟹ 5 decimal places

Example 2

If the correct product of the problem 174 × 68 = 118.32 has been given without multiplying, place the decimal point correctly in one or both factors.

Solution 💡

Since the decimal point of the product after 2 decimal places, then the sum of numbers of decimal places in both factors equals 2 decimal places as   17.4 × 6.8   or   1.74 × 68   or   174 × 0.68

Note that 🔖

There are more than one correct answer is possible.

✓ check your understanding

Multiply ·

a. 0.62 × 5.3

b. 2.734 × 0.39

* Let your child find the sum of decimal places in the factors and put the decimal point in the product to match this number.

Multiplying Decimals through the Hundredth Place

Multiplying Decimals through the Thousandth Place

● REMEMBER   ● UNDERSTAND   ○ APPLY   ♣ PROBLEM SOLVING   From the school book

1. Place the decimal point in the product. you may have to write zeroes in the product.

a. $1.2 \times 2.4 = 288$

b. 📖 $5.8 \times 7.4 = 4292$

c. 📖 $32.4 \times 5.3 = 17172$

d. $0.09 \times 0.3 = 27$

e. $1.75 \times 2.3 = 4025$

f. $15.85 \times 4.3 = 68155$

g. 📖 $15.4 \times 0.49 = 7546$

h. 📖 $11.68 \times 2.4 = 28032$

i. $3.14 \times 0.05 = 1570$

j. $0.24 \times 0.398 = 9552$

2. 📖 The correct product for each problem has been given. Without multiplying, use

reasoning to place the decimal point correctly in one or both factors. More than one

correct answer is possible.

a. $38 \times 64 = 24.32$

b. $532 \times 17 = 9.044$

c. $826 \times 43 = 3,551.8$

d. $18 \times 145 = 261$

3. Find the product for each multiplication problem using the standard algorithm.

a. 📖	b. 📖	c. 📖	d.
$\begin{array}{r} 2.43 \\ \times\ 6.9 \\ \hline +\underline{\quad\quad} \\ \hline \end{array}$	$\begin{array}{r} 29.35 \\ \times\ 3.4 \\ \hline +\underline{\quad\quad} \\ \hline \end{array}$	$\begin{array}{r} 47.8 \\ \times\ 5.2 \\ \hline +\underline{\quad\quad} \\ \hline \end{array}$	$\begin{array}{r} 2.08 \\ \times\ 0.07 \\ \hline +\underline{\quad\quad} \\ \hline \end{array}$
e.	f. 📖	g. 📖	h. 📖
$\begin{array}{r} 9.72 \\ \times\ 0.46 \\ \hline +\underline{\quad\quad} \\ \hline \end{array}$	$\begin{array}{r} 1.74 \\ \times\ 35 \\ \hline +\underline{\quad\quad} \\ \hline \end{array}$	$\begin{array}{r} 10.21 \\ \times\ 0.64 \\ \hline +\underline{\quad\quad} \\ \hline \end{array}$	$\begin{array}{r} 7.184 \\ \times\ 6.3 \\ \hline +\underline{\quad\quad} \\ \hline \end{array}$

l.📖
```
    8. 1 0 8
  ×   0. 4 5
+ _____
_____
```

j.📖
```
    2. 4 6 7
  ×       4 1
+ _____
_____
```

k.📖
```
    6. 4 2 9
  ×       1. 9
+ _____
_____
```

l.📖
```
    8. 3 7 5
  ×       2 0
+ _____
_____
```

m.📖
```
    5. 3 2 8
  ×       7. 9
+ _____
_____
```

n.
```
    6. 4 6 1
  ×     0. 2 8
+ _____
_____
```

o.📖
```
    8. 9 2
  ×   0. 1 7
+ _____
_____
```

p.📖
```
    12. 8 7
  ×     7. 3
+ _____
_____
```

4. Compare the products of the following by putting (< , > or =).

a. 0.318 × 1.5 ◯ 3.18 × 0.15

b. 0.75 × 0.02 ◯ 7.5 × 0.2

c. 13.6 × 0.4 ◯ 0.136 × 0.4

d. 7.3 × 0.28 ◯ 0.73 × 2.8

e. 0.342 × 1.2 ◯ 3.42 × 0.12

f. 172 × 0.003 ◯ 0.172 × 0.3

g. 48.2 × 3.7 ◯ 4.82 × 37

h. 42 × 1.532 ◯ 4.2 × 15.32

i. 2.06 × 1.5 ◯ 2.06 × 0.3 × 0.5

5. Solve the problem : 7.184 × 6.3 by two different ways by using.

a. Area model.

b. Standard algorithm.

Choose the correct answer.

1 $0.676 \times 0.4 =$

   A. 0.27   B. 0.3068

   C. 2.704   D. 0.2704

2. The decimal point in the product of 3.9×4.25 is after _____ place(s).

   A. 1   B. 2

   C. 3   D. 4

3. $8.43 \times 0.9 \approx$ _____

               (to the nearest Hundredths)

   A. 7.5   B. 7.59

   C. 7.58   D. 7.588

4. $9.13 \times 3.5 \boxed{} 91.3 \times 0.35$

   A. >   B. <

   C. =   D. otherwise

                              (Ismailia 23)

5. $2.7 \times 0.0099 =$ _____

   A. 0.002672   B. 0.02672

   C. 0.02673   D. 0.2673

6. $0.025 \times 0.04 =$

   A. 0.01   B. 0.001

   C. 0.0001   D. 0.00001

7. $4.012 \times 5.6 =$ _____

              (to the nearest Tenths)

   A. 22   B. 22.5

   C. 22.47   D. 22.467

8. $4.325 \times 2.3 =$ _____

   A. 9.9475   B. 9.9745

   C. 9.95   D. 13.84

9. $0.15 \times 39.8 \boxed{} 1.5 \times 0.398$

   A. >   B. <   C. =

10. $0.2 \times 0.631 =$ _____

   A. 1.262   B. 0.1262

   C. 0.01262   D. 0.001261

Learn

Metric units of length

Metric units of length are meter (m), centimeter (cm) , millimeter (mm) and kilometer (km)

An ant is about 3 millimeters	A pencil is about 20 centimeters	The length of a class is about 6 meters	The distance between Cairo and Alexandria is about 248 kilometers

• Converting metric units of length :

×1,000 ×100 ×10

| km | m | cm | mm |
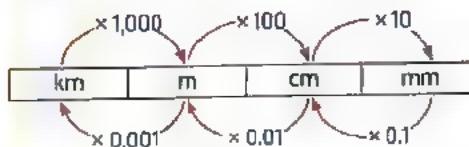
× 0.001   × 0.01   × 0.1

1 km = 1,000 m

1 m = 100 cm

1 cm = 10 mm

Unit of Measurement	In Millimeters	In Centimeters	In Meters
Millimeter	1	0.1	0.001
Centimeter	10	1	0.01
Meter	1,000	100	1

For Example :

• 7.54 m = 7.54 × 100 cm = 754 cm

• 14.16 mm = 14.16 × 0.1 cm = 1.416 cm

• 255 2 cm = 255.2 × 0.01 m = 2.552 m

• 4,620 m = 4,620 × 0.001 km = 4.62 km

Notes for parents :

• Your child relate the metric system to the place value system and use decimals to represent equivalent measurements.

211

Metric units of mass

Metric units of mass are gram (g) and kilogram (kg)

A ring is about 4 grams.	A watermelon is about 8 kilograms.

• Converting metric units of mass :

×1,000

kg	g
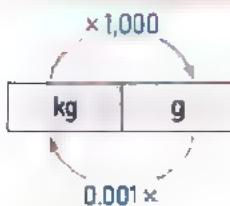
1 kg = 1,000 g

0.001 ×

Unit of Measurement	In Grams	In Kilograms
Gram	1	0.001
Kilogram	1,000	1

For Example
• 4.56 kg = 4.56 × 1,000 gm = 4,560 g
• 567 gm = 567 × 0.001 kg = 0.567 kg

• 2 kg – 500 gm = 2 × 1,000 gm – 500 gm
    = 2,000 gm – 500 gm = 1,500 gm

Metric units of capacity

Metric units of capacity are liter (L) and milliliter (mL)

An injection is about 4 milliliters.	A bottle of milk is about 1 liter.

• Converting metric units of capacity :

×1,000

L	mL
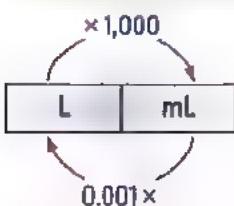
1 L = 1,000 mL

0.001 ×

Unit of Measurement	In Milliliters	In Liters
Milliliter	1	0.001
Liter	1,000	1

For Example :
• 12.4 mL = 12.4 × 0.001 L = 0.0124 L
• 4.25 L = 4.25 × 1,000 mL = 4,250 mL

• 3.4 L – 1,700 mL = 3.4 L – 1,700 × 0.001 L
    = 3.4 L – 1.7 L = 1.7 L

Notes for parents :
• Explain that, like our place value system, relationship in the metric system are based on 10 , 100, and 1,000, also known as powers of 10.

Example 1

Complete each of the following.

a. $17.3 \text{ mm} = \underline{\qquad} \text{ cm}$

b. $4.17 \text{ km} = \underline{\qquad} \text{ m}$

c. $45.8 \text{ cm} = \underline{\qquad} \text{ m}$

d. $0.15 \text{ m} = \underline{\qquad} \text{ mm}$

e. $0.08 \text{ kg} = \underline{\qquad} \text{ g}$

f. $540 \text{ g} = \underline{\qquad} \text{ kg}$

g. $0.043 \text{ L} = \underline{\qquad} \text{ mL}$

h. $7,800 \text{ mL} = \underline{\qquad} \text{ L}$

Solution 💡

a. $17.3 \text{ mm} = 17.3 \times 0.1 \text{ cm} = 1.73 \text{ cm}$

b. $4.17 \text{ km} = 4.17 \times 1,000 \text{ m} = 4,170 \text{ m}$

c. $45.8 \text{ cm} = 45.8 \times 0.01 \text{ m} = 0.458 \text{ m}$

d. $0.15 \text{ m} = 0.15 \times 1,000 \text{ mm} = 150 \text{ mm}$

e. $0.08 \text{ kg} = 0.08 \times 1,000 \text{ g} = 80 \text{ g}$

f. $540 \text{ g} = 540 \times 0.001 \text{ kg} = 0.54 \text{ kg}$

g. $0.043 \text{ L} = 0.043 \times 1,000 \text{ mL} = 43 \text{ mL}$

h. $7,800 \text{ mL} = 7,800 \times 0.001 \text{ L} = 7.8 \text{ L}$

Example 2

Compare, write [> , < or =] for each ☐.

a. 50 mL ☐ 0.05 L

b. 0.7 kg ☐ 697 g

c. $2,400 \text{ mm}$ ☐ 4.2 m

d. 350 cm ☐ 3.4 m

Solution 💡

a. Since $50 \text{ mL} = 50 \times 0.001 \text{ L} = 0.05 \text{ L}$ So, $50 \text{ mL} = 0.05 \text{ L}$

b. Since $0.7 \text{ kg} = 0.7 \times 1,000 \text{ g} = 700 \text{ g}$ So, $0.7 \text{ kg} = 700 \text{ g} > 697 \text{ g}$

c. Since $2,400 \text{ mm} = 2,400 \times 0.001 \text{ m} = 2.4 \text{ m}$ So, $2,400 \text{ mm} = 2.4 \text{ m} < 4.2 \text{ m}$

d. Since $350 \text{ cm} = 350 \times 0.01 \text{ m} = 3.5 \text{ m}$ So, $350 \text{ cm} = 3.5 \text{ m} > 3.4 \text{ m}$

✅ Check your understanding

Complete.

a. $4.007 \text{ km} = \underline{\qquad} \text{ m}$

b. $6,750 \text{ mL} = \underline{\qquad} \text{ L}$

c. $452 \text{ cm} = \underline{\qquad} \text{ m}$

d. $40 \text{ g} = \underline{\qquad} \text{ kg}$

e. $2.7 \text{ L} = \underline{\qquad} \text{ mL}$

f. $4.21 \text{ m} = \underline{\qquad} \text{ cm}$

g. $2.73 \text{ kg} = \underline{\qquad} \text{ g}$

h. $2.5 \text{ L} - 500 \text{ mL} = \underline{\qquad} \text{ mL}$

* Explain that since metric measurements are related through powers of 10 , it is possible to write measurements using decimals.

1. 🔲 Select the most appropriate unit of measurement from the given terms to measure the length of each object.

<div align="center">

millimeters   centimeters   meters   kilometers
</div>

a. Pencil : Unit of measure ——————— — —————— ——————

b. Height of building : Unit of measure ——————— —— —

c. Length of dinner table : Unit of measure —— ——

d. Length of the Nile River : Unit of measure ——————— ——————

e. Length of insect : Unit of measure ——————

---

2. **Complete.**

a. $5.7 L = 5.7 \times$ ——— = ——— mL

b. $2.589 m = 2.589 \times$ ——— = ——— cm

c. $87.2 km = 87.2 \times$ ——— = ——— m

d. $3.02 kg = 3.02 \times$ ——— = ——— g

e. $140 g = 140 \times$ ——— = ——— kg

f. $18.4 mm = 18.4 \times$ ——— = ——— cm

g. $52 cm = 52 \times$ ——— = ——— m

h. 📖 $142 cm = 142 \times$ ——— = ——— m

i. 📖 $317 kg = 317 \times$ ——— = ——— g

j. $370 mL = 370 \times$ ——— = ——— L

k. $5.9 m = 5.9 \times$ ——— = ——— mm

l. $527 cm = 527 \times$ ——— = ——— mm

m. $8.657 m = 8.657 \times$ ——— = ——— cm ≈ ——— cm (to the nearest cm.)

n. $7,400 mL = 7,400 \times$ ——— = ——— L ≈ ——— (to the nearest liters)

o. $4.8 km - 1,800 m =$ ——— km

p. $570 mm + 1.43 m =$ ——— m

q. $5 L - 3,200 mL =$ ——— L

r. $15.6 kg + 2,600 g =$ ——— kg

214

3. Choose the correct answer.

a. 10,870 g = ――― kg
   A. 1,087   B. 108.7   C. 10.87   D. 1.087

b. 3,465 mL = ――― L
   A. 0.3465   B. 3.465   C. 34.65   D. 346.5

c. 22 cm = ――― m
   A. 2,200   B. 220   C. 2.2   D. 0.22

d. 0.7 m = ――― cm   (Aswan – Kom Omba 23)
   A. 7   B. 70   C. 700   D. 7,000

e. 17.6 kg = ――― g   (Port Said 23)
   A. 0.176   B. 1.76   C. 1,760   D. 17,600

f. 95 mm = ――― cm
   A. 9.5   B. 950   C. 9,500   D. 95,000

g. 19,629 mL = ――― L
   A. 1,962.9   B. 196.29   C. 19.629   D. 1.9629

h. 3.3 m = ――― cm
   A. 33   B. 330   C. 3,300   D. 33,000

i. 700 g = ――― kg
   A. 7,000   B. 70   C. 7   D. 0.7

j. 694 mm = ――― cm
   A. 6,940   B. 69.4   C. 6.94   D. 0.694

k. 2.5 L = ――― mL
   A. 2,500   B. 250   C. 25   D. 0.25

l. 7.8 cm = ――― mm
   A. 0.078   B. 0.78   C. 78   D. 780

4. Put (<) , (>) or (=).

a. 2,180 cm ◯ 2.18 m

b. 0.41 kg ◯ 416 g

c. 5 mL ◯ 0.005 L

d. 24 mm ◯ 0.24 cm

e. 0,088 m ◯ 8.7 mm

f. 7.1 L ◯ 715 mL

g. 8 g ◯ 0.08 kg

h. 0.01 km ◯ 7 m

215

5. Order each of the following from least to greatest.

a. 0.75 kg , 570 g , 0.8 kg , 790 g , 0.762 kg

b. 0.32 m , 300 mm , 31 cm , 0.315 m , 319 mm

c. 400.2 mL , 0.35 L , 427 mL , 0.3 L , 0.42 L

6. ▦ Study each problem. In each problem, mark whether the multiplication given to complete the conversion is correct. Select Y for yes and N for no. Then, complete all conversions by filling in each blank with the equivalent measurement (even if the conversion is incorrect).

a. 0.007 kg = ——— g 0.007 × 1,000 Y/N	b. 51 mm = ——— cm 51 × 10 Y/N	c. 230 cm = ——— m 230 × 0.01 Y/N	d. 4,800 mL = ——— L 4,800 × 0.1 Y/N
e. 4 cm = ——— m 4 × 0.01 Y/N	f. 500 mL = ——— L 500 × 1,000 Y/N	g. 5.67 m = ——— cm 5.67 × 10 Y/N	h. 782 mm = ——— cm 782 × 10 Y/N
i. 1.5 m = ——— cm 1.5 × 0.01 Y/N	j. 6,410 cm = ——— m 6,410 × 0.01 Y/N	k. 6,410 m = ——— km 6,410 × 0.001 Y/N	l. 350 cm = ——— m 350 × 0.01 Y/N
m. 0.8 cm = ——— mm 0.8 × 0.1 Y/N	n. 10.3 m = ——— cm 10.3 × 0.01 Y/N	o. 9,320 mm = ——— cm 9,320 × 10 Y/N	p. 9,320 cm = ——— m 9,320 × 0.01 Y/N

7. ▭ There are two categories of weightlifting: The Snatch and the Clean and Jerk. World Champion Egyptian weightlifter Mohamed Ehab wants to compare his personal best in these two categories. In the Snatch, he was able to lift 173 kilograms. He was able to lift 201,000 grams in the Clean and Jerk. Use multiplication and powers of 10 to explain which measurement is greater.

_____

_____

8. ▭ Yousra is a veterinarian. She needs to weigh a cat to see if it is healthy Yousra records that the cat weighs 3.648 kilograms. Her assistant records that the cat weighs 3,648.0 grams.
Do you agree with Yousra or her assistant? Why?

_____

_____

216

Choose the correct answer.

1. 40 g ◯ 0.04 kg
  A. >
  B. <
  C. =

2. Which of the following is the greatest ?
  A. 2,700 mm
  B. 3 m
  C. 0.002 km
  D. 285.8 cm

3. 5.6 cm = ——— mm
  A. 56
  B. 0.56
  C. 560
  D. 5,600

4. 4.7 mL = ——— L
  A. 0.047
  B. 0.47
  C. 4,700
  D. 0.0047

5. 3.5 L – 1,500 mL = ——— L
  A. 2
  B. 20
  C. 200
  D. 2,000
  [Ismailia 23]

6. 1.62 m ◯ 1,619 mm
  A. >
  B. <
  C. =

7. 4.61 m = ——— cm
  A. 46.1
  B. 461
  C. 4,610
  D. 46,100

8. 18.14 mm = ——— cm
  A. 0.1814
  B. 181.4
  C. 1.814
  D. 1,814

9. 14.12 kg – 100 g = ——— kg
  A. 14.012
  B. 1.412
  C. 14.02
  D. 141.2

10. 740 m = ——— km
  A. 7.4
  B. 0.74
  C. 7,400
  D. 74

11. 📖 Amgad is a weightlifter. He needs to drink about 4,230 milliliters of water every day. How many liters of water does he need ? Select the multiplication problem that could be used to answer the question.
  A. 4,230 × 1000
  B. 4,230 × 0.01
  C. 4,230 × 100
  D. 4,230 × 0.001

12. Aya ran a 5 kilometers race. How many meters did she run ?   [Aswan 23]
  A. 50
  B. 500
  C. 5,000
  D. 0.005

13. There are ——— milliliters in 18 liters.   [Giza - Awseem 23, Cairo   Al Khalifa and Al Mokattam 23]
  A. 18
  B. 180
  C. 1,800
  D. 18,000

Learn How to solve multistep story problems ?

Read to understand

- Read the story loudly more than one time carefully.
- Identify the details and quantities given.
- Identify the hidden question (if exists).
- Search for key words.

Plan

- Decide the operation $(+, -, \times, \div)$.
- Decide the strategy you can use to solve the problem.

Solve

- Solve the hidden question (if exists).
- How can you use the strategy to solve the problem ?

Check

- How do you know your answer is correct ?
- What other strategy could you use to solve the problem ?

Example 1

Amira went to the supermarket, she bought 1.5 kg of tomato, 875 g of peas, 0.09 kg of spices and 2,750 g of cucumber. Find the weight (in grams) of what Amira bought.

Notes for parents :
- Remind your child that multistep problem is a problem that involves more than one operation.

218

Solution 💡

This example wants to find the weight (in grams)

So, we convert each kilogram

into gram before adding.

1.5 kg tomato = 1.5 × 1,000 g = 1,500 g

0.09 kg spices = 0.09 × 1,000 g = 90 g

So, the total weight

= 1,500 + 875 + 90 + 2,750 = 5,215 g

Notice that

If you convert to grams, you would use more whole numbers, meaning the calculations would involve larger numbers. If you convert to kilograms, you would use more decimals. No matter to what unit you convert, the sum is the same but given in different units.

Example 2

Sandy bought 450 mL of mango juice. Her sister Marvina drank 0.26 liter. What is the remaining quantity of the mango juice ?

Solution 💡

Since 0.26 liter = 0.26 × 1,000 mL = 260 mL

So, the remaining quantity = 450 – 260 = 190 mL

Example 3

A trousers factory needs 1.12 m of fabric to produce one trousers. If the factory plans to produce 48 trousers and the fabric roll contains 2,000 cm. of fabric , how many rolls does the factory need ? And how long is the remaining part ?

Solution 💡

The fabric needed to make 48 trousers = 48 × 1.12 m = 53.76 m

Each fabric roll contains 2,000 cm = 2,000 × 0.01 m = 20 m Since [20 × 2 < 53.76 < 20 × 3]

So, the number of rolls needed = 3 rolls

The length of fabric in 3 rolls = 3 × 20 = 60 m

The remaining part = 60 – 53.76 = 6.24 m

✅ check your understanding

Youssef wants to know how much he has grown this year. In January, he was 141.8 cm By the end of the year, he was 1.6 meters tall. How much did Youssef grow this year ?

_____

_____

_____

_____

_____

• Ask your child what strategy he/she decided to use, and why he/she chose it.

219

1. If the heights of Nada, Habiba and Sara are 1.22 m, 124 cm and 1,230 mm , what is the total of their heights ?

2. If Nader's weight at the beginning of a year is 34.1 kg and his weight at the end of the same year is 32,460 g, how much weight did Nader lose?

3. Mohamed bought 12 bottles of orange juice each contains 640 mL. Ibrahim bought 7 bottles of mango juice each contains $\frac{1}{2}$ liter. How many liters do they have together?

4. The length of a fabric roll is 4.56 m. A piece of length 114 cm is taken to make a blouse and another piece of length 980 mm to make a skirt. How .ong is the remaining part ?

5. ▣ Marwan is a computer engineer. The computer he is repairing is current.y in three pieces that have a mass of 2 kilograms, 600 grams and 0.03 kg. His manager is waiting for the last piece, which has a mass of 1,750 g to arrive. What will the mass of the computer be when it is completely assembled ?

6. ▣ Rania is a nurse in a hospital. She is getting wrap bandages from the storage closet for her patients. She needs 1.35 meters of bandages for each of her 4 patients. There are 250 centimeters in each package. How many packages does she need ? How many, if any, wil. be left over ?

7. ▣ Dalia made a liter of sugar cane juice. She drank 320 mil.iliters. Her father drank 0.25 liters. How much sugar cane juice is remaining ?

8. ▣ a. Ehab wants to know how much he has grown this year. In January, he was 138.2 centimeters. By the end of the year, he was 1.5 meters tall. How much did Ehab grow this year ?

b. Ehab s twin sister Eman also wants to know how much she grew. In January, she was 1.34 meters. At the end of the year, she was 145 centimeters.

Who grew more, Ehab or Eman ?

How much more ?

9. The dimensions of the two rectangles are shown in the following figures.

42 mm

8.7 cm

5.4 cm

63 mm
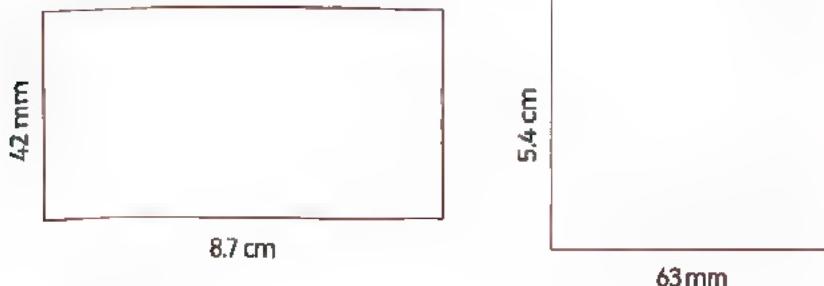
Find:

a. The difference in perimeter of the two rectangles.

b. The difference in area of the two rectangles.

10. 📖 Marwan is designing a new circuit board for the computer he is repa ring. The old circuit board measured 7.25 centimeters by 36 m llimeters. He planned for the new circuit board to be 80 mm by 5.5 cm.

What is the difference in area of the circuit boards ?

Concept 2

Dividing Decimals

Lesson No.	Lesson Name	Learning Objectives
Lessons 10&11	Dividing by Powers of Ten	• Students will explain patterns they notice when dividing by powers of ten.
	Patterns and Relationships in Powers of Ten	• Students will make connections between multiplying and dividing by powers of ten.
Lessons 12&13	Dividing Decimals by Whole Numbers	• Students will use the standard algorithm to divide decimals through the Thousandths place.
	Dividing Decimals by Decimals	• Students will use the standard algorithm to divide decimals through the Thousandths place.

Learn ① How to divide a number by powers of 10

A school has 350 pupils distributed among 10 caisses.

How many pupils are in each class ?

• Numbers of pupils in each class = $350 \div 10$

= 35 pupils

How do you divide a number by a power of 10 ?

• To divide by → 10 / 100 / 1,000 → move the decimal point → 1 place / 2 places / 3 places → to the (left)

• To divide by → 0.1 / 0.01 / 0.001 → move the decimal point → 1 place / 2 places / 3 places → to the (right)
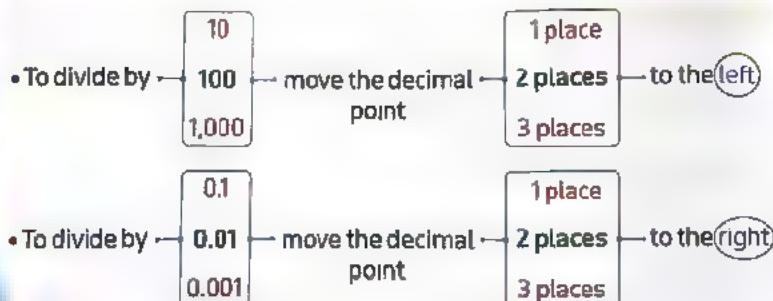
For Example :

• $14.36 \div 10 = 1.436$

• $005.87 \div 100 = 0.0587$

• $25600 \div 1,000 = 25.6$

Move the decimal point to the left

• $78.36 \div 0.1 = 783.6$

• $239.80 \div 0.01 = 23,980$

• $0.0063 \div 0.001 = 6.3$

Move the decimal point to the right

Notice

It is possible to put zeroes on the left of the whole part or zeroes on the right of the last digit of the decimal part without changing value of the number.

For Example :

• 000235.36000 ....

• 000736.0000 ....

Notes for parents :

• Remind your child that when dividing by 10 , 100 , or 1,000 , move the decimal point one place to the left for each zero in the divisor

223

Example 1

Find the result of each of the following.

a. $745.36 \div 100 =$ ——

b. $1,736.8 \div 10 =$ ——

c. $2,385 \div 0.01 =$ ——

d. $6,532 \div 1,000 =$

e. $7.389 \div 0.1 =$ ——

f. $8.3 \div 0.001 =$ ——

Solution

a. $745.36 \div 100 = 7.4536$

b. $1736.8 \div 10 = 173.68$

c. $2385.00 \div 0.01 = 238,500$

d. $6532.0 \div 1,000 = 6.532$

e. $7.389 \div 0.1 = 73.89$

f. $8.300 \div 0.001 = 8,300$

✓ Check your understanding

Find each of the following.

a. $89.36 \div 0.01 =$ ——

b. $256 \div 0.001 =$ ——

c. $9.03 \div 0.1 =$ ——

d. $736.8 \div 100 =$ ——

e. $23.68 \div 10 =$ ——

f. $681.3 \div 1,000 =$ ——

Notes for parents :

• Remind your child that he/she may need to insert zeroes. For example, $6.87 \div 100 = 0.0687$.

Learn ② Dividing and multiplying by the powers of ten

- Dividing a number by → $\boxed{\begin{array}{c}0.1\\0.01\\0.001\end{array}}$ → is equivalent to multipling it by → $\boxed{\begin{array}{c}10\\100\\1,000\end{array}}$
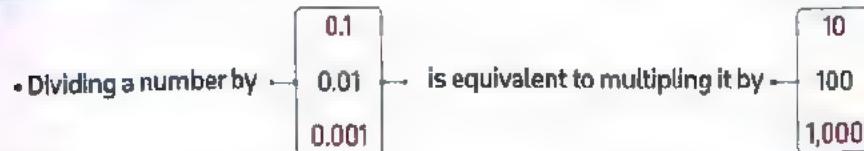
For Example :

- $235.87 \div 0.1 = \boxed{2,358.7}$, $235.87 \times 10 = \boxed{2,358.7}$
- $235.87 \div 0.01 = \boxed{23,587}$, $235.87 \times 100 = \boxed{23,587}$
- $235.870 \div 0.001 - \boxed{235,870}$, $235.870 \times 1,000 = \boxed{235,870}$

$\div 0.1$ 🤝 $\times 10$ $\div 0.01$ 🤝 $\times 100$ $\div 0.001$ 🤝 $\times 1,000$

- Dividing a number by → $\boxed{\begin{array}{c}10\\100\\1,000\end{array}}$ → is equivalent to multipling it by → $\boxed{\begin{array}{c}01\\0.01\\0.001\end{array}}$
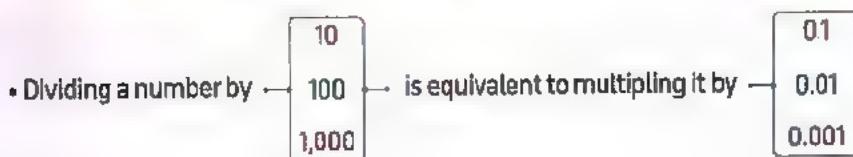
For Example :

- $235.87 \div 10 = \boxed{23.587}$, $235.87 \times 0.1 = \boxed{23.587}$
- $235.87 \div 100 = \boxed{2\ 3587}$, $235.87 \times 0.01 = \boxed{2.3587}$
- $0235.87 \div 1,000 = \boxed{0.23587}$, $0235.87 \times 0.001 = \boxed{0.23587}$

$\div 10$ 🤝 $\times 0.1$ $\div 100$ 🤝 $\times 0.01$ $: 1,000$ 🤝 $\times 0.001$

Example 2

Solve the following problems, then draw lines between problems with the same answer.

$785.6 \div 100$	785.6×100
$785.6 \div 0.1$	785.6×0.1
$785.6 \div 0.01$	785.6×10
$785.6 \div 1,000$	785.6×0.01
$785.6 \div 10$	$785.6 \times 1,000$
$785.6 \div 0.001$	785.6×0.001

- Make sure that your child understand that dividing by 0.1 , 0.01 , or 0.001 is equivalent to multiplying by 10 , 100 , or 1,000

$\boxed{225}$

Solution

785.6 ÷ 100 = 7.856	785.6 × 100 = 78,560
785.6 ÷ 0.1 = 7,856	785.6 × 0.1 = 78.56
785.6 ÷ 0.01 = 78,560	785.6 × 10 = 7,856
785.6 ÷ 1,000 = 0.7856	785.6 × 0.01 = 7.856
785.6 ÷ 10 = 78.56	785.6 × 1,000 = 785,600
785.6 ÷ 0.001 = 785,600	785.6 × 0.001 = 0.7856
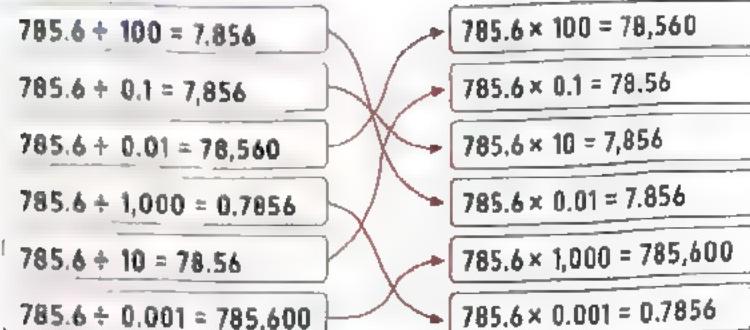
Example 3

Complete each of the following.

a. 17.63 × ——— = 176.3

b. 56 × ——— = 0.056

c. 258.7 ÷ ——— = 258,700

d. 83.67 × ——— = 8,367

e. 96 ÷ ——— = 0.096

f. 34.56 ÷ ——— = 3,456

g. 45.38 × ——— = 4.538

h. 7,380 ÷ ——— = 73,800

Solution

a. 17.63 × 10 = 176.3

b. 56 × 0.001 = 0.056

c. 258.7 ÷ 0.001 = 258,700

d. 83.67 × 100 = 8,367

e. 96 ÷ 1,000 = 0.096

f. 34.56 ÷ 0.01 = 3,456

g. 45.38 × 01 = 4.538

h. 7,380 ÷ 0.1 = 73,800

✔ Check your understanding

Use multiplication to find the same result of each of the following.

a. 73.85 ÷ 100

b. 893.5 ÷ 0.01

c. 1.32 ÷ 10

Notes for parents :
- Ask your child to explain when it is important to insert zeroes when moving the decimal point to the left or to the right.

Metric conversions with Multiplication and Division

Using multiplication

× 1,000   × 100   × 10

km	m	cm	mm

× 0.001   × 0.01   × 0.1

× 1,000

kg	g

× 0.001

× 1,000

L	mL

× 0.001

Using division

÷ 0.001   ÷ 0.01   ÷ 0.1

km	m	cm	mm

÷ 1,000   ÷ 100   ÷ 10

÷ 0.001

kg	g

÷ 1,000

÷ 0.001

L	mL

÷ 1,000
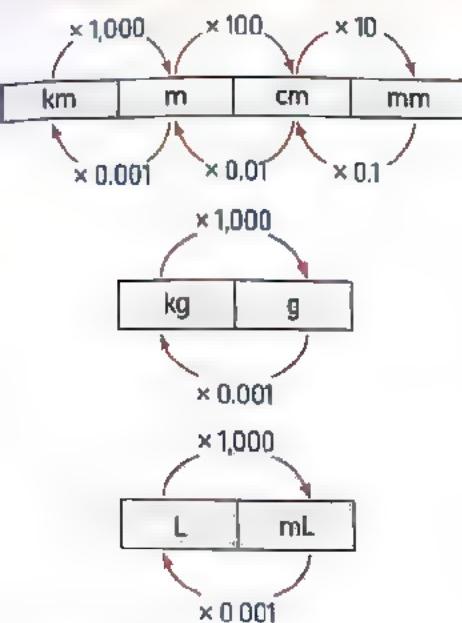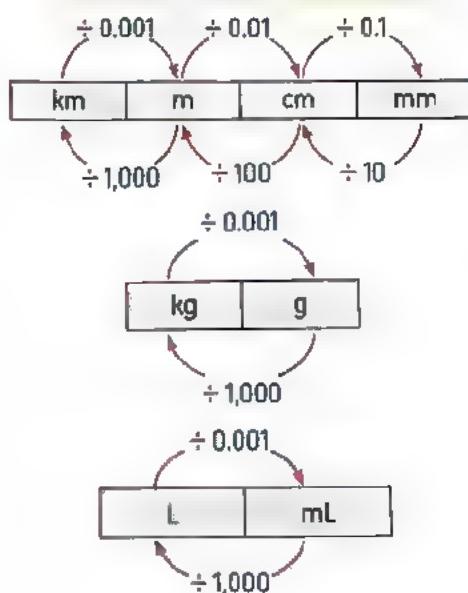
Example 4

Complete each conversion, then write a multiplication equation and a division equation with the same answer.

a. 512 cm = _____ m

$512 \times \dfrac{\quad}{\quad} = \dfrac{\quad}{\quad}$

$512 \div \dfrac{\quad}{\quad} = \dfrac{\quad}{\quad}$

b. 700 g = _____ kg

$700 \times \dfrac{\quad}{\quad} = \dfrac{\quad}{\quad}$

$700 \div \dfrac{\quad}{\quad} = \dfrac{\quad}{\quad}$

c. 2,345 mL = _____ L

$2{,}345 \times \dfrac{\quad}{\quad} = $

$2{,}345 \div \dfrac{\quad}{\quad} = \dfrac{\quad}{\quad}$

Solution

a. 512 cm = 5.12 m

512 × 0.01 = 5.12

512 ÷ 100 = 5.12

b. 700 g = 0.7 kg

700 × 0.001 = 0.7

700 ÷ 1,000 = 0.7

c. 2,345 mL = 2.345 L

2,345 × 0.001 = 2.345

2,345 ÷ 1,000 = 2.345

✔ check your understanding

Complete using multiplication and division to get the same result.

a. 25.6 mm = _____ cm

_____ × _____ = _____

_____ ÷ _____ = _____

b. 2.5 L = _____ mL

_____ × _____ = _____

_____ ÷ _____ = _____

c. 736 g = _____ kg

_____ × _____ = _____

_____ ÷ _____ = _____

• Ask your child to explain when he/she multiply or divide to convert from larger unit to smaller unit, and from smaller unit to larger one.

227

1. Find each of the following.

a. 📖 $2,500 \div 1 =$ ———
$2,500 \div 10 =$ ———
$2,500 \div 100 =$ ———
$2,500 \div 1,000 =$ ———
$2,500 \div 0.1 =$ ———
$2,500 \div 0.01 =$ ———
$2,500 \div 0.001 =$ ———

b. 📖 $6,700 \div 1,000 =$ ———
$6,700 \div 100 =$ ———
$6,700 \div 10 =$ ———
$6,700 \div 1 =$ ———
$6,700 \div 0.1 =$ ———
$6,700 \div 0.01 =$ ———

c. 📖 $800 \div 100 =$ ———
$800 \div 10 =$ ———
$800 \div 1 =$ ———
$800 \div 0.1 =$ ———
$800 \div 0.01 =$ ———

d. $783 \div 10 =$ ———
$783 \div 100 =$ ———
$783 \div 1,000 =$ ———
$783 \div 0.1 =$ ———
$783 \div 0.01 =$ ———
$783 \div 0.001 =$ ———

e. $235.68 \div 10 =$ ———
$235.68 \div 100 =$ ———
$235.68 \div 1,000 =$ ———
$235.68 \div 0.1 =$ ———
$235.68 \div 0.01 =$ ———
$235.68 \div 0.001 =$ ———

f. $8.7 \div 10 =$ ———
$8.7 \div 100 =$ ———
$8.7 \div 1,000 =$ ———
$8.7 \div 0.1 =$ ———
$8.7 \div 0.01 =$ ———
$8.7 \div 0.001 =$ ———

2. Find quotient of each of the following.

a. 📖 $32 \div 10 =$ ———
b. $27.3 \div 0.1 =$ ———
c. 📖 $5.7 \div 100 =$ ———
d. 📖 $5.7 \div 0.1 =$ ———
e. $23 \div 1,000 =$ ———
f. 📖 $2.16 \div 0.01 =$ ———
g. 📖 $71 \div 1,000 =$ ———
h. $15.08 \div 0.01 =$ ———
i. 📖 $0.4 \div 10 =$ ———
j. 📖 $12.8 \div 0.01 =$ ———
k. 📖 $0.4 \div 0.001 =$ ———
l. $7352.5 \div 1,000 =$ ———
m. $0.736 \div 0.1 =$ ———
n. 📖 $29.08 \div 0.1 =$ ———
o. $105 \div 1,000 =$ ———
p. 📖 $102.3 \div 0.01 =$ ———
q. $1.368 \div 100 =$ ———
r. $0.005 \div 0.01 =$ ———

3. Complete.

a. $7,368 \div$ ——— $= 73.68$
b. $9.8 \div$ ——— $= 980$
c. $32.68 \div$ ——— $= 0.03268$
d. ——— $\div 0.01 = 567$
e. ——— $\div 1,000 = 253$
f. ——— $\div 100 = 2.5$

228

4. 📖 Solve the following problems, then draw lines between problems with the same answer.

$510.05 \times 0.001 =$ _____

$510.05 \times 0.01 =$ _____

$510.05 \times 0.1 =$ _____

$510.05 \times 10 =$ _____

$510.05 \times 100 =$ _____

$510.05 \times 1{,}000 =$ _____

$510.05 \div 0.001 =$ _____

$510.05 \div 0.01 =$ _____

$510.05 \div 0.1 =$ _____

$510.05 \div 10 =$ _____

$510.05 \div 100 =$ _____

$510.05 \div 1{,}000 =$ _____

5. 📖 Complete each equation with the correct power of 10. Be sure to look carefully at the given operation.

a. $14.6 \times$ _____ $= 146$

b. $387.23 \times$ _____ $= 3.8723$

c. $9.102 \times$ _____ $= 910.2$

d. $65 \times$ _____ $= 6{,}500$

e. $0.39 \times$ _____ $= 0.039$

f. $0.75 \times$ _____ $= 750$

g. $28.4 \times$ _____ $= 0.284$

h. $150.8 \times$ _____ $= 150{,}800$

$14.6 \div$ _____ $= 146$

$387.23 \div$ _____ $= 3.8723$

$9.102 \div$ _____ $= 910.2$

$65 \div$ _____ $= 6{,}500$

$0.39 \div$ _____ $= 0.039$

$0.75 \div$ _____ $= 750$

$28.4 \div$ _____ $= 0.284$

$150.8 \div$ _____ $= 150{,}800$

6. Complete.

a. $89.36 \div 100 = 89.36 \times$ _____

b. $7.5 \div 0.01 = 7.5 \times$ _____

c. $0.005 \div 0.01 = 0.005 \times$ _____

d. $675 \div 1{,}000 = 675 \times$ _____

e. $2.732 \times 0.1 = 2.732 \div$ _____

f. $25{,}600 \times 0.01 = 25{,}600 \div$ _____

g. $33.56 \times 100 = 33.56 \div$ _____

h. $600.5 \times 10 = 600.5 \div$ _____

7. Put (< , = or >).

a. 2.36×100 ⬡ $2.36 \div 0.01$

c. 73.6×0.1 ⬡ $73.6 \div 100$

e. $0.923 \times 1{,}000$ ⬡ 92.3

g. $506.2 \div 10$ ⬡ $5{,}062$

b. 73.5×100 ⬡ $73.5 \div 0.001$

d. 253×0.01 ⬡ $25.3 \div 10$

f. $58.3 \div 0.001$ ⬡ $583 \times 1{,}000$

h. 37.8×10 ⬡ $3.78 \div 0.1$

229

8. Complete each conversion. Then, write a multiplication equation and a division equation with the same answer.

a. ( ) 712 mL = L	b. 73.5 kg = — g	c. ( ) 23 m = — cm
712 × _____ = _____	73.5 × _____ = _____	23 × _____ = _____
712 ÷ _____ = _____	73.5 ÷ _____ = _____	23 ÷ _____ = _____
d. 25,300 cm = m	e. ( ) 300 g = kg	f. 763.4 m = _____ km
25,300 × _____ = _____	300 × _____ = _____	763.4 × _____ = _____
25,300 ÷ _____ = _____	300 ÷ _____ = _____	763.4 ÷ _____ = _____
g. 5,200 mm = m	h. 125 L = _____ mL	i. ( ) 5,200 mm = cm
5,200 × _____ = _____	125 × _____ = _____	5,200 × _____ = _____
5,200 ÷ _____ = _____	125 ÷ _____ = _____	5,200 ÷ _____ = _____
j. 9,800 cm = km	k. 2.45 mL = L	l. 4.7 cm = _____ mm
9,800 × _____ = _____	2.45 × _____ = _____	4.7 × _____ = _____
9,800 ÷ _____ = _____	2.45 ÷ _____ = _____	4.7 ÷ _____ = _____

9. The price of one chocolate bar is 5.25 LE. Find the price of 100 bar of chocolate.

10. A box contains 10 bars of soap each of weight 125 g. Find the weight of the 10 bars in kg.

11. Tony walks 725 m per day. What is the total covered distance in 10 days ?

12. 2.5 Liter of juice wanted to be poured into 10 glasses equally. Find the capacity of each glass.

13. 📖 Temperatures must reach at least 1,100°C for glass to be blown or for earthenware clay to harden. Water boils at about one-tenth of that temperature. Select the choice that is closest to the temperature at which water boils.

A. 1,100 × 10   B. 1,100 ÷ 10   C. 1,100 × 0.1   D. 1,100 ÷ 0.1

230

Choose the correct answer.

1. $6.3 \times 100 = $ —————
- A. 0.063
- B. 6,300
- C. 6.300
- D. 630

2. $783.5 \times $ ————— $= 7,835$
- A. 0.1
- B. 0.01
- C. 10
- D. 100

3. ————— $\times 0.01 = 5.36$
- A. 0.536
- B. 536
- C. 53.6
- D. 5.3600

4. $7.38 \times 0.1 = $ —————
- A. 7.38×100
- B. 73.8
- C. $7.38 \div 10$
- D. 0.0738

5. $32.59 \div 0.1 = $ ————— [Ismailia 23]
- A. 3.259
- B. 32.59
- C. 325.9
- D. 3,259

6. $85.3 \div \frac{1}{100} = $ —————
- A. 8,530
- B. 8.53
- C. 0.853
- D. 85,300

[El Menla – Deir Mawas 23]

7. One hundredth of the number $76.93 = $ —————
- A. $76.93 \div 0.01$
- B. $76.93 \div 100$
- C. 769.3
- D. 7,693

8. $5,200 \text{ g} = $ ————— kg
- A. 52
- B. 5,200,000
- C. 5.2
- D. 0.052

9. $30.5 \text{ km} = $ ————— m
- A. 30,500
- B. 30.5000
- C. 305
- D. 3,050

10. $0.735 \text{ L} = $ ————— mL
- A. 735
- B. 7.35
- C. 73.5
- D. 7,350

11. $3,200 \text{ mL} = $ ————— L [El Beheira 23]
- A. 320
- B. 32
- C. 3.2
- D. 0.23

12. There are 30,000 grams in ————— kilograms. [El Monofia - Tala 23]
- A. 3
- B. 3,000
- C. 30
- D. 300

13. He ght of a building of ten floors where the height of each floor 280 cm is ————— m
- A. 2,800
- B. 280
- C. 28
- D. 2.8

14. A wooden bar of length 7.75 m is divided into 10 pieces of equal length, then length of each piece = ————— cm
- A. 0.775
- B. 77.5
- C. 775
- D. 7.75

231

- **Dividing Decimals by Whole Numbers**
- **Dividing Decimals by Decimals**

Learn ❶ Dividing decimals by whole numbers

Nana has 210 kg of sugar, she wants to distribute them equally among 40 bags.

What is the weight of sugar in each bag?

The answer of this problem must not include remainder:

How can you evaluate 210 ÷ 40 ?

- Use the standard algorithm to

  evaluate 210 ÷ 40

$$\begin{array}{r} 5 \\ 40\overline{)210} \\ -\ 200 \\ \hline 10 \end{array}$$

, then the quotient is 5 and the remainder is 10 which is not enough to be divided by 40, so we regroup 10 ones to be divisible by 40 as the following steps:

Remember that

The steps of standard algorithm

Divide

Multiply

Subtract

Compare

Bring down

Repeat this order until the division is completed.

- Place a decimal point to the right of Ones place in the dividend [210.]

- Place a zero in the Tenth place [210.0] and another zero in the Hundredth place [210.00], then the value of the dividend does't change.

$$\begin{array}{r} 5.25 \\ 40\overline{)210.00} \\ -\ 200\downarrow \\ \hline 100 \\ -\ \ 80\downarrow \\ \hline 200 \\ -\ 200 \\ \hline 000 \end{array}$$

- Place a decimal point in the quotient directly above the decimal point in the dividend, then bring down the zero which in the Tenth place.

Complete the other steps of the standard algorithm.

- You can check the reasonableness with compatible number as 200 ÷ 40 = 5 and 5.25 is close to 5

- You can check the answer by multiplication : 5.25 × 40 = 210

Notes for parents :

- Let your child remember the steps of standard algorithm : Divide, multiply, subtract, compare, and bring down. Repeat until the devision is complete.

Example 1

Find : $155 \div 50$

① The answer includes a remainder

② The answer does not include a remainder

Solution

① The answer includes a remainder	② The answer does not include a remainder
$$\begin{array}{r} 3 \\ 50 \overline{)\ 155} \\ -150 \\ \hline 5 \end{array}$$	$$\begin{array}{r} 3.1 \\ 50 \overline{)\ 155.0} \\ -150\downarrow \\ \hline 50 \\ -\ \ 50 \\ \hline 00 \end{array}$$
, then $155 \div 50 = 3$ R5	, then $155 \div 50 = 3.1$

• Infinite division

How can you evaluate $5.5 \div 3$ to the nearest Hundredth ?

• Notice that in this case, the operation of division is infinite, so we call it infinite division.

• You can go on the operation of division, but you need the result of division rounded to the nearest Hundredth, so only divide until you reach three decimal places, then use the rules of rounding.

then, $5.5 \div 3 \approx 1.83$ to the nearest Hundredth.

• The quotient of this problem is a repeating decimal.

• You can check the reasonableness with compatible number as $6 \div 3 = 2$ and 1.833 is close to 2

$$\begin{array}{r} 1.833 \\ 3 \overline{)\ 5.500} \\ -3\downarrow\ \ \ \\ 25\ \ \\ -24\downarrow \\ 10 \\ -\ \ 9\downarrow \\ 10 \\ -\ \ 9 \\ \hline 1 \end{array}$$

Example 2

Use the standard algorithm to find the quotient of each of the following make sure that your answer does not include a remainder.

a. $58.05 \div 15$

b. $3 \div 40$

c. $223.1 \div 9$ (to the nearest Hundredth)

d. $1.21 \div 6$ (to the nearest Thousandth)

• Remind your child that placing a decimal and a zero to the right of ones place in the dividend does not change its value.

233

Solution 💡

a.
```
        3.87
  15 ) 58.05
     - 45
       130
     - 120
       105
     -  105
       000
```
, then 58 05 ÷ 15 = 3.87

b.
```
        0.075
   40 ) 3.000
      - 280
        200
      - 200
        000
```
, then 3 ÷ 40 = 0.075

c.
```
        24.788
    9 ) 223.100
      - 18
        43
      - 36
        71
      - 63
        80
      - 72
        80
      - 72
         8
```
, then 223.1 ÷ 9 ≈ 24.79
to the nearest Hundredth.

d.
```
        0.2016
    6 ) 1.2100
      - 12
        01
      -  0
        10
      -  6
        40
      - 36
         4
```
, then 1.21 ÷ 6 ≈ 0.202
to the nearest Thousandth.

✓ **Check** your understanding

Use the standard algorithm to find the quotient of each of the following.

a. 342.7 ÷ 46

b. 84.24 ÷ 78

c. 30) 4.8

d. 6) 15.8

Notes for parents :
- Your child might misplace the decimal point in the quotient in relation to the decimal point in the dividend

234

Learn ② Dividing decimals by decimals

To divide by a decimal , you can use the same way of dividing whole numbers,
by writing the divisor as a whole number.
Do this by multiplying the divisor and the dividend by 10 , 100 , 1,000 , ... ect.
according to the number of places of the decimal part of the divisor.

For Example ·

Divide : 32 ÷ 0.4

To divide 32 by 0.4 , multiply the divisor by 10
(to change it into a whole number),
and then multiply also the dividend by 10
$0.4 \times 10 = 4$ and $32 \times 10 = 320$

So, $32 \div 0.4$
=
$320 \div 4$
=
80

Notice
You can move the decimal point in the dividend by the same number of places that you
need to move the decimal point in the divisor to make the divisor a whole number.

For Example .

- $3.2 \div 0.4 = 32 \div 4 = 8$
- $0.42 \div 0.07 = 42 \div 7 = 6$
- $2.72 \div 0.8 = 27.2 \div 8 = 3.4$

Remark
You may need to add a zero (or more) to the right of the dividend so that you can move
the decimal point.

For Example :
$14.1 \div 1.41 = 14.10 \div 1.41 = 1,410 \div 141 = 10$

Example 3
Find the quotient of each of the following :

a. $29.76 \div 6.4$

b. $0.1134 \div 0.18$

· Remind your child that he/she can place one zero or more to the right of the last decimal place of the
number without changing its value.

235

Solution

a. The quotient $= 29.76 \div 6.4$

$= 297.6 \div 64$

$= 4.65$

The divisor has one decimal place. So, the decimal point moves one place to the right in both, the divisor and the dividend.

Divide by using standard algorithm

Draft

```
          4.65
    64) 297.60
       -256
        416
       -384
        320
      -  320
        000
```

b. The quotient $= 0.1134 \div 0.18$

$= 11.34 \div 18$

$= 0.63$

Draft

```
        0.63
    18) 11.34
       -108
        054
      -  54
        000
```

☑ check your understanding

Find the quotient of the following :

a. $34.4 \div 0.4$

b. $3.175 \div 2.5$

c. $0.95) 12.584$

d. $27.365 \div 8.42$

Notes for parents :
• Remind your child how he/she divide two numbers using standard algorithm.

● REMEMBER   ● UNDERSTAND   ○ APPLY   ⚬ PROBLEM SOLVING | From the school book

1. Complete each of the following as in expample (a).

a. $3.5 \div 0.5 = 35 \div 5 = 7$

b. $4.2 \div 0.7 = \underline{\quad} \div \underline{\quad} = \underline{\quad}$

c. $3.6 \div 0.4 = \underline{\quad} \div \underline{\quad} = \underline{\quad}$

d. $0.28 \div 0.04 = \underline{\quad} \div \underline{\quad} = \underline{\quad}$

e. $7.2 \div 0.8 = \underline{\quad} \div \underline{\quad} = \underline{\quad}$

f. $76.5 \div 7.65 = \underline{\quad} \div \underline{\quad} = \underline{\quad}$

g. $0.33 \div 0.11 = \underline{\quad} \div \underline{\quad} = \underline{\quad}$

---

2. Find quotient of each of the following.

a. $2.64 \div 0.2$

b. $4.86 \div 0.9$

c. $2.67 \div 1.2$

d. $4.384 \div 0.32$

e. $0.1932 \div 0.92$

f. $1.155 \div 0.35$

g. $357 \div 0.7$

h. $3.375 \div 0.15$

i. $7.7728 \div 0.64$

---

3. Use the standard algorithm for division to find the quotient.

a. $5 \overline{)51.65}$ Quotient: ———

b. $6 \overline{)73.02}$ Quotient: ———

c. $16 \overline{)62.24}$ Quotient: ———

d. $30 \overline{)589.5}$ Quotient: ———

e. $2.2 \overline{)26.4}$ Quotient: ———

f. $0.4 \overline{)99}$ Quotient: ———

g. $0.04 \overline{)1.5}$ Quotient: ———

h. $1.9 \overline{)9.956}$ Quotient: ———

i. $0.05 \overline{)1.43}$ Quotient: ———

j. $7.3 \overline{)3431}$ Quotient: ———

k. $0.5 \overline{)44}$ Quotient: ———

l. $0.04 \overline{)0.51}$ Quotient: ———

m. $0.7\overline{)7\,0}$

Quotient : ———

n. $0.5\overline{)0.\,9\,1}$

Quotient :———

o. $0.04\overline{)5\,7.\,6}$

Quotient : ———

p. $0.5\overline{)1.\,3}$

Quotient :———

4. Find the quotient of each of the following to the nearest Tenth.

a. $9 \div 35$

b. $15 \div 38$

c. $8 \div 7$

d. $13 \div 77$

e. $121.1 \div 9$

f. $546.8 \div 53$

g. $53.27 \div 2.1$

h. $24.31 \div 0.97$

5. Find to the nearest Hundredth the quotient of each of the following.

a. $46 \div 2.8$

b. $7.4 \div 5.1$

c. $7.034 \div 1.7$

d. $0.4582 \div 5.2$

6. Carry out each of the following.

a. $8.5 \div 2.7$ (rounded to the nearest Tenth)

b. $13.029 \div 0.52$ (rounded to the nearest Hundredth)

c. $28.448 \div 1.2$ (rounded to the nearest Tenth)

d. $45.862 \div 3.5$ (rounded to the nearest Thousandth)

7. Put the suitable relation ($<$, $=$ or $>$) in the blanks.

a. $38.12 \div 0.25$ ◯ $3.812 : 2.5$

b. $55 \div 1.1$ ◯ $55 \div 0.11$

c. $462.3 \div 0.23$ ◯ $4,623 \div 2.3$

d. $756 \div 5.4$ ◯ $75.6 \div 0.054$

e. $0.46 \div 4.6$ ◯ 0.01

f. $53.7 \div 3.5$ ◯ $5.37 \div 0.35$

g. $845 \div 4.9$ ◯ $84.5 \div 49$

8. Complete.

a. $2 \div 0.3 \approx$ ——— (to the nearest Hundredth)

b. $5 \div 1.1 \approx$ ——— (to the nearest Hundredth)

c. $7 \div 1.2 \approx$ ——— (to the nearest Tenth)

d. $50.3 \div 0.6 \approx$ ——— (to the nearest Thousandth)

e. 39 days $\approx$ ——— weeks. [Ismailia 23]

f. 254 hours $\approx$ ——— days.

g. 67 months $\approx$ ——— years.

h. 47 days $\approx$ ——— (to the nearest week)

238

9. Evaluate the student's work below. Explain the error (or errors) the student made. Then, perform the division correctly to find the quotient.

Divide: $0.3\overline{)7\,7.4\,3}$

Student's work: 77.43 ÷ 0.3 will have the same quotient as 7.743 ÷ 3

```
        2, 5 8 1
   3 ) 7. 7 4 3
       6
       ─────
       1 7
       1 5
       ─────
           2 4
           2 4
           ─────
               3
               3
           ─────
```

---

10. Use the standard algorithm for division to find the quotients.

1. An electrician has a wire of 150 m. He wants to divide it into 40 parts of equal length, such that the length of each part is a whole number. What is the length of one part? How many meters will be left?

2. The city council planted trees on a side of a 2,050-meters road. If 75 trees are planted at equal distances, such that the distance between each two trees represents a whole number. What is the distance between each two trees? and what is the remaining distance?

---

11. Use the standard algorithm to find the quotients. (Note the quotient is a decimal.) Check your answer for reasonableness.

1. An electrician has a wire of 150 m. He wants to divide it into 40 parts of equal length. What is the length of one part?

2. The city council planted trees on a side of a 2,050 meters road. If 75 trees are planted at equal distances. What is the distance between each trees?

3. Emad, the electrician, has 4.5 meters of wire that is cut into 30 pieces that are all the same length. Find the length of each piece of wire.

4. Dalia wants to pour 20 liters of hibiscus equally into 50 cups. How much hibiscus (in liters) will be in each cup?

239

5. The length of a roll of cloth is 59.5 metres.
   It was divided into equal parts where the
   length of each part is 3.5 metres.
   Find the number of these parts.

6. A train covered a distance of 221.65 km in
   2.5 hours. Calculate the distance it covers in
   one hour.

7. A building has the height of 42 meters. If the
   height of each floor is 2.8 meters, then find
   the number of floors.

8. The area of a rectangle is 9.43 cm^2, and its width is 2.4 cm,
   Find its length and approximate it to the nearest Hundredth.

Challenge

12. Given that : $2,752 \div 43 = 64$, then find mentally.

   a. $2,752 \div 4.3$ b. $27.52 \div 4.3$

   c. $275.2 \div 0.064$ d. $2.752 \div 43$

13. Given that : $46 \times 57 = 2,622$, then find mentally.

   a. $26.22 \div 0.57$ b. $26.22 \div 4.6$

   c. $262.2 \div 5.7$ d. $262.2 \div 0.46$

   e. $26.22 \div 0.057$ f. $2.622 \div 0.46$

Choose the correct answer.

1. $30.24 \div 3.6 =$ —————

   A. $3.024 \div 36$ B. $302.4 \div 36$

   C. $302.4 \div 3.6$ D. $3024 \div 36$

2. $4.5 \div 0.45 =$ ——

   A. 1   B. 10

   C. 100   D. 0.1

3. $80 \div 0.08 =$ —————— (Ismailia 23)

   A. 10   B. 100

   C. 1000   D. 8000

4. $6 \div 0.75 =$ —————

   A. 8   B. 2.25

   C. 4.5   D. 3.75

5. $32.5 \div$ ————— $= 100$ (Ismailia 23)

   A. 3.25   B. 0.0325

   C. 0.325   D. 325

6. $8.3 \div 3 \approx$ —————

(to the nearest Hundredth)

   A. 2.7   B. 2.77

   C. 2.8   D. 2.766

7. $462.3 \div 0.23$ ☐ $4,623 \div 2.3$

   A. >   B. <   C. =

   (El Monofia - Tala 23)

8. 30 days $\approx$ ————— weeks. (Souhag 23)

(to the nearest week)

   A. 3   B. 4

   C. 5   D. 6

9. $1.1 \div 1.3 \approx$ ————— (to the nearest Tenth)

   A. 0.8   B. 0.9

   C. 0.84   D. 0.85

10. $224.38 \div 65 =$ —————

   A. 3.5   B. 3.45

   C. 3.13   D. 3.452

11. $35 \div 0.7 =$ (Cairo – Heliopolis 23)

   A. 50   B. 70

   C. 0.7   D. 0.5

12. $90 \div 0.03 =$ ————— (Port Said 23)

   A. 3,000   B. 30

   C. 300   D. 3

13. $1.5 \div 0.5 =$ —————

   A. 5   B. 3

   C. 0.5   D. 0.3

   (Aswan – Kom Ombo 23)

14. $25.25 \div 0.25 =$ —————

   A. 11   B. 101

   C. 110   D. 111

   (Giza – El Agouza 23)

Unit Five Assessment
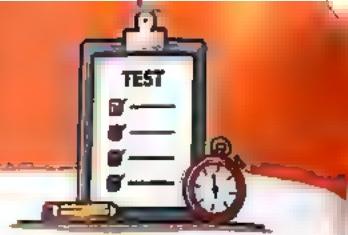
1. Choose the correct answer.

1. 700 g = _____ kg (El Monofia – Tala 23)

    A. 0.7   B. 7   C. 0.07   D. 0.007

2. $0.2 \times 0.3 =$

    A. 6   B. 0.6   C. 0.06   D. 0.0006

3. $25.25 \div 0.25 =$

    A. 11   B. 101   C. 110   D. 111

4. 7.5 L – 1,500 mL = _____ L

    A. 6   B. 60   C. 600   D. 6,000

5. If the area model of a problem is

	4	0.3
5	x	15
0.8	3.2	y

, then x + y = _____

    A. 20   B. 20.24   C. 36.55   D. 4.8

6. $8.43 \times 0.2 \approx$ _____ (to the nearest Hundredths)   (Cairo – El Nouzha 23)

    A. 1.686   B. 1.7   C. 1.69   D. 2

7. 7.18×3.5 _____ 71.8×0.35 (Ismailia 23)

    A. >   B. <   C. =

---

2. Complete the following.

1. $704.1 \times 0.01 =$ _____

2. 230 meters = _____ centimeters   [Port Said 23]

3. The quotient of $0.36 \div 0.6 =$ _____   [Cairo – El Sherouk 23]

4. $0.3 \div 0.2 =$ _____   [Giza – Awseem 23]

5. 43 days ≈ _____ weeks (to the nearest week)

6. _____ $\times 0.001 = 5.234$

7. 0.004 L = _____ mL

8. 6 cm and 5 mm = _____ cm

242

3. Choose the correct answer.

1. $461.12 \div 10 = $ ————— [Cairo - El Nouzha 23]

   A. 4.6112 B. 46.112 C. 461.12 D. 4611.2

2. $0.004 \times 1,000 \bigcirc 40,000 \times 0.001$

   A. > B. < C. =

3. $6.345 : 0.01 = $ ———— [Alexandria - West 23]

   A. 6,345 B. 0.06345 C. 634.5 D. 63,450

4. $2 \div 0.4 = $ ————— [El Beheira 23]

   A. 2 B. 10 C. 5 D. 8

5. The divisor in the equation $1.8 \div 6 = 0.3$ is [El Menia 23]

   A. 0.3 B. 1.8 C. 6 D. 3

6. $735 \text{ cm} = $ ———— m [El Beheira - Housh Essa 23]

   A. 73,500 B. 7.35 C. 73.5 D. 7,350

7. $60 \text{ g} = $ ———— kg

   A. 0.06 B. 0.6 C. 60 D. 6,000

---

4. Answer the following questions.

1. Edward has 3.45 meters of wire that is cut into 15 equal pieces.
   Find the length of each piece of wire ? [Cairo - El Khalifa and El Mokattam 23]

2. Find the product of : 25×32.5 using any strategy. [Aswan 23]

3. Ahmed bought 8 pens of the same type, if the price of one pen is 3.5 pounds.
   How much money will Ahmed pay ? [El Menia - Deir Mawas 23]

4. Using any strategy to find : [with steps]
   $0.1134 \div 0.18$ [Ismailia 23]

243

UNIT 6

Numerical Expressions and Patterns

▶ **Concept 1 :**
Evaluating Numerical Expressions and Patterns

Evaluating Numerical Expressions and Patterns

Lesson No.	Lesson Name	Learning Objectives
Lessons 1&2	Ordering of Mathematical Operations	• Students will use the order of operations to evaluate expressions with whole numbers and decimals.
	Numerical Expressions with Parentheses.	• Students will identify how grouping symbols affect the order of operations. • Students will evaluate an expression with groping symbols.
Lesson 3	Writing Expressions to Represent Scenarios	• Students will write an expression to represent a written scenario.
Lesson 4	Identifying Numerical Patterns	• Students will identify a numerical pattern. • Students will explain the rule for a numerical pattern. • Students will use letters to represent unknown quantities in a rule for a numerical pattern.

- **Ordering of Mathematical Operations**
- **Numerical Expressions with Parentheses**

Learn

How do you evaluate a numerical expression with more than one operation ?

Two students evaluated the numerical expression : $36 + 9 \div 3 \times 5$ a got different answers.

Omar's Way	Sandy's Way
$36 + 9 \div 3 \times 5$	$36 \div 9 \div 3 \times 5$
$45 \div 3 \times 5$	$36 + 3 \times 5$
15×5	$36 + 15$
75	51

To avoid getting more than one answer, mathematicians use the **Ordering of Mathematical Operations** given below. Sandy used the **CORRECT ORDER.** The value of the expression is **51**.

Ordering of Mathematical Operations

1. First do the operations inside parentheses and brackets.
2. Then, multiply and divide in order from left to right.
3. Finally, add and subtract in order from left to right.

Example 1

Use the order of mathematical operations to evaluate each expression.

a. $12 + (9 - 2) \times 8$

b. $53 \times 2 + 54 \div 1.5$

c. $40 \div 8 \times 0.01 + 14.95$

d. $2,514.6 - 23.4 \div 0.01 + 11.7$

e. $288 - [12 + 3 \times (28.5 \times 2.1)]$

Notes for parents :
- Ask your child which operation comes first when solving the problems :
  $12 \div (4 - 1)$ and $6 + 4 \times 5$.

$36 + 9 \div 3 \times 5$

$36 + 3 \times 5$

$36 + 15$

51

Solution 💡

a. $12 + (9 - 2) \times 8$ Parentheses first

$= 12 + 7 \times 8$ Then multiply

$= 12 + 56$ Finally add

$= 68$

b. $53 \times 2 + 54 \div 1.5$ There is no parentheses, so multiply and divide first

$= 106 + 36$ Then add

$= 142$

c. $40 \div 8 \times 0.01 + 14.95$ There is no parenthese, so divide from left to right

$= 5 \times 0.01 + 14.95$ Then multiply

$= 0.05 + 14.95$ Finally add

$= 15$

d. $2,514.6 - 23.4 \div 0.01 + 11.7$ There is no parenthese, so divide first

$= 2,514.6 - 2,340 + 11.7$ Then subtract from left to right

$= 174.6 + 11.7$ Finally add

$= 186.3$

e. $288 - [12 + 3 \times (28.5 \times 2.1)]$ Inside parentheses first

$= 288 - [12 + 3 \times 59.85]$ Then multiply

$= 288 - [12 + 179.55]$ Then brackets

$= 288 - 191.55$ Finally subtract

$= 96.45$

Math Hint

1. For operations within parentheses
   a. multiply or divide from left to right
   b. add or subtract from left to right

2. For operations outside of parentheses
   a. multiply or divide from left to right
   b. add or subtract from left to right

✅ Check your understanding

Use the order of mathematical operations to evaluate each expression.

a. $63 + 14 \times 25$

b. $912 - 84.6 \div 0.1$

c. $100 \times (72.18 + 3.12) \div 6$

• Let your child follow the order of operations within parentheses.

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING | 📖 From the school book

1. Use the order of mathematical operations to evaluate each expression of the following.

a. 📖 $10 \times 4 - 3 = $ ——

b. $2 + 7 \times 5 - 6 = $ —— [Aswan 23]

c. 📖 $15 \div 3 + 2 = $ ——

d. $55 \div (2 + 9) - 5 = $ —— [Giza – Awssem 23]

e. 📖 $12 + 24 \div 4 + 8 = $ ——

f. $5.5 \div 5 \times 10 - 10 = $—— [El Beheira 23, Giza – Awseem 23]

g. 📖 $34 \times 28 \div 2 + 5 = $ ——

h. $28.1 - 3.5 \times 0.2 + 29.4 = $ —— [Ismailia 23]

i. 📖 $145.42 - 7.11 \times 10 + 13.2 = $ ——

j. $1.3 + 3.45 \times 8 - 2.02 = $ —— [Cairo – Heliopolis 23]

k. 📖 $102.15 + 6 \div 1.2 - 34 \times 2.3 = $——

l. $3.52 \times 10 + 283 \div 10 = $—— [Aswan – Kom Ombo 23]

m. 📖 $35 \times 0.1 + 89.14 \div 0.1 = $ ——

n. $2.4 + 3.15 \times 10 - 7.6 = $ —— [Cairo 23]

o. 📖 $56.5 \times 2.3 - 15 + 12.7 = $ ——

p. 📖 $597.8 \div 6.1 + 13 \times 1.7 = $——

q. 📖 $1,403.5 - 12.3 \div 0.01 + 9.8 = $ ——

r. 📖 $82.43 \times 3.1 + 4.05 \div 0.01 - 2.5 = $——

s. 📖 $90.7 + 116.6 \times 0.1 \times 2 - 20 = $——

248

2. 📖 Grouping symbols. Evaluate the set of expressions.

  a. $45.84 + 13.05 \div 5 + 20.32 - 1.14 \times 2.1$

  b. $(45.84 + 13.05) \div 5 + 20.32 - 1.14 \times 2.1$

---

3. 📖 Grouping symbols, Advanced. Evaluate the set of expressions.

  a. $30 \times 2.5 + 47.18 - 3.12 \div 0.1$

  b. $30 \times (2.5 + 47.18 \quad 3.12 \div 0.1)$

---

4. 📖 The Right route. Ali drives a bus route through the city. His stops follow the order of operations for evaluating the expression.

$$300.53 - 11.04 \times 0.2 \div 0.01 + 13.07$$

Stop 1	Stop 2	Stop 3	Stop 4
A. $300.53 - 11.04$	E. $2.208 \div 0.01$	J. $57.898 : 0.01$	N. $5,789.8 + 13.07$
B. 11.04×0.2	F. $0.2 \div 13.08$	K. $220.8 + 13.07$	P. $79.73 + 13.07$
C. $0.2 \div 0.01$	G. 289.49×0.2	L. 289.49×20	Q. $300.53 - 233.87$
D. $0.01 + 13.07$	H. 11.04×20	M. $300.53 - 220.8$	R. $57.898 + 13.07$

Record the letters of the correct stops along his route to show the steps for evaluating the expression.

1. Stop 1: _____

2. Stop 2: _____

3. Stop 3: _____

4. Stop 4: _____

Tour Bus

---

5. 📖 How Many Values ? Use grouping symbols to create as many expressions with different values as you can.

  a. $29.2 + 43 \times 0.01 + 15 \div 0.1$

  b. $158 \div 2 + 6 \times 10.5 \quad 5$

  c. $57 - 11 \times 1.2 + 3.4 + 1.9 \div 10$

6. ▣ **Place the Grouping Symbols.** Kamal placed grouping symbols in the expression,

When he evaluated the expression, he found a value of 6.45

What grouping symbols did he use? Where did he place them?

$15.25 \div 2 + 3 + 6.8 \div 2$

7. **Writing About Math.** Explain why the values of $217 + 354 \times 0.1$ and $(217 + 354) \times 0.1$ are different. What is the value of each expression?

8. **Who is correct?** Wael and Marwan both solved the problem $47.1 \times 31 - 28.4 \div 4 + 33.2$

Wael says the answer is 63.815 and Marwan says the answer is 1,486.2 Who is correct? How do you know? Explain your thinking.

Choose the correct answer.

1. Which is the first step in evaluating
$28.1 - 3.5 \times 0.2 + 29 - 4$?

A. $28.1 - 3.5$ B. 3.5×0.2

C. $0.2 + 29$ D. $29 - 5$

[Giza 23]

2. The first operation to calculate:
$15 \div (3 - 2) \times 7 + 8$ is ———

A. addition   B. subtraction

C. multiplication   D. division

3. To find the value of expression:
$43.1 \div 0.1 - 3.1 \times (2.2 + 3.8)$ perform the
operations ——— first.

A. subtraction   B. multiplication

C. within parentheses   D. division

[Aswan – Kom Ombo 23]

4. The second step in the expression:
$36.12 \times 4 + 55 - 12.5$ is ———

A. 36.12×4

B. 36.12×59

C. $144.48 + 55$

D. $144.48 - 12.5$

5. $2.3 \div 0.1 + 10 =$ ———

A. 230 B. 10.23

C. 33 D. 0.33

[El Beheira - Housh Essa 23]

6. $12 + 24 \div 4 + 8 =$ ———

A. 28 B. 26

C. 22 D. 10

[Port Said 23]

7. The value of this expression:
$(7.5 \times 10) + 2.3$ is ———

A. 77.3 B. 9.8

C. 19.8 D. 2.78

[El Menia 23]

8. $25 \times 4 \div (6 - 5) =$ ———

A. 100 B. 101

C. 0.01 D. 165

[Monofia - Shiben El Kom 23]

9. $(13.5 - 5.13) \div 0.1 + 16.3 =$ ———

A. 10 B. 83.5

C. 30 D. 100

[Cairo – El Nouzha 23, Al Khalifa and Al Mokattam 23]

10. $12 =$ ———

A. $54 \div (3 + 6 \times 2)$

B. $(54 \div 3) + (6 \times 2)$

C. $54 \div (3 + 6) \times 2$

D. $54 \div [(3 + 6) \times 2]$

Learn | Writing Expression

The numerical expression in math is a sentence with numbers and math operations. This math operations may be "addition, subtraction, multiplication, or division". Expression may contain parentheses or brackets if needed.

Example 1

Write an expression that matches the clues.
Then, evaluate the expression.
a. Add 22.7 and 35.3, then multiply the result by 3
b. Divide 225.3 by 3, then add 4.9. After, divide the result by 10
c. Find the difference between 66.25 and 7.5, then divide the result by 0.2 last add to 1.4

Solution

a. Add 22.7 and 35.3 $\longrightarrow$ $22.7 + 35.3$

Then multiply the result by 3 $\longrightarrow$ $(22.7 + 35.3) \times 3$

> **Hint**
>
> Parentheses are needed to find the result of adding the numbers first before doing the multiplication operation
> Evaluate $(22.7 + 35.3) \times 3 = 58 \times 3 = 174$

b. Divide 225.3 by 3 $\longrightarrow$ $225.3 \div 3$

, then add 4.9 $\longrightarrow$ $225.3 \div 3 + 4.9$

After, divide the result by 10 $\longrightarrow$ $(225.3 \div 3 + 4.9) \div 10$

Evaluate : $(225.3 \div 3 + 4.9) \div 10 = (75.1 + 4.9) \div 10$

$= 80 \div 10 = 8$

c. Find the difference between 66.25 and 7.5 $\longrightarrow$ $66.25 - 7.5$

Divide the result by 0.2 $\longrightarrow$ $(66.25 - 7.5) \div 0.2$

Add to 1.4 $\longrightarrow$ $(66.25 - 75) \div 0.2 + 1.4$

Evaluate : $(66.25 - 7.5) \div 0.2 + 1.4 = 58.75 \div 0.2 + 1.4$

$= 293.75 + 1.4 = 295.15$

Notes for parents :

• Ask your child to read the clues well, and translate it into numbers and operations.

252

Expressions and story problems

Example **2**

Write an expression that matches the scenario. Then, evaluate the expression.

Amgad ran 15.3 kilometers for 5 days each and 12.7 kilometers for 8 days each.
How many kilometers did he run over those 13 days ?

Solution 💡

In 5 days ⟶ 15.3×5

, in 8 days ⟶ 12.7×8

Then in 13 days ⟶ $15.3 \times 5 + 12.7 \times 8$

Evaluate : $76.5 + 101.6 = 178.1$ kilometres

> **Steps to solve**
> 💡 Read and understand
> 📋 Plan and solve
> ✍️ Check your answer

Example **3**

Write an expression that matches the scenario. Then, evaluate the expression.

Amira had 275 pounds. She bought 3 kilograms of oranges with 7.25 pounds each and 13.75 pounds for sweet corn. How much money was left with Amira ?

Solution 💡

Total money ⟶ 275

Price of oranges ⟶ 3×7.25

Price of oranges and sweet corn ⟶ $3 \times 7.25 + 13.75$

Left money ⟶ $275 - (3 \times 7.25 + 13.75)$

Evaluate : $275 - (21.75 + 13.75)$

$= 275 - 35.5 = 239.5$ pounds.

✅ **check** **your understanding**

1. Write an expression that matches the clues, then evaluate "Subtract 6.2 from the product of 5.2 and 3. Then, multiply by 10".

_____

_____

2. Ali had 700 pounds. He bought 3 toys for 40 pounds each and 7 toys for 50 pounds each How much money was left with Ali ?

_____

_____

• Remind your child to follow the order of operations when he/she evaluate the expression.

253

1. Writing Expressions. **For each problem, write an expression that matches the clues. Then, evaluate the expression.**

   a. Add 7.4 and 2 3. Then, multiply the result by 10.

   b. ⬜ Subtract 3.1 from 4.62. Then, multiply the result by 2.

   c. Multiply 6.3 by 12.4 and then add 21.88 After, divide the result by 20.

   d. ⬜ Divide 93 by 0.3 and then add 114.7. After, divide the result by 5.

   e. ⬜ Add 30.4 , 87 and 17.5. Then, subtract the result from 224.7. Multiply by 100.

   f. Divide 2,325 by 10. Next subtract 162. Then, add 24.5. Last, multiply the result by 3.

   g. 📖 Multiply 7.6 by 100. Next, subtract 34.3. Then, add 12.4. Last, divide the result by 0.1.

   h. Find the sum of 1.3 and 3.45. Multiply by 8. Next, subtract 2.02. Then, subtract the result from 75.

   i. ⬜ Find the difference between 10 and 9.27. Multiply by the sum of 54 and 46. Then, divide 1,168 by the result.

2. Expressions and story problems. **For each problem, write an expression that matches the scenario. Then, evaluate the expression.**

   a. Ehab had 102.5 pounds. He bought 4 toys for 19.5 pounds each.
      How much money was left with Ehab ?

   🔔 **Remember**
   The steps to write expressions

   💡 Read and understand
   📓 Plan and solve
   🧹 Check your answer

254

b. 📖 Kamel is saving money to buy a car. He currently has 1,000 L.E. He begins working two jobs. At his first job, he saves 50 L.E. a week. At his second job, he saves 30 L.E. a week. He saves the money from his jobs for 4 weeks to add to his savings. How much does Kamel have saved at the end of the 4 weeks ?

_____

c. Sandy made 11.8 liters of orange juice. She sold 4 liters and divided the rest into 6 bottles equally. How much orange juice is in each bottle ?

_____

d. Ali traveled 3,900 kilometers by car. He drove 560 kilometers for 3 days each and 430 kilometers for 5 days each. How many kilometers were left to finish his trip ?

_____

e. 📖 As a part of his fitness training, Mounir cycles 38.7 kilometers in 2 hours. If he cycles at the same rate the entire time, how many meters does he cycle per minute ?

_____

f. 📖 Hoda is filling identical vases with water for flower arrangements at the florist. She starts with 15.75 liters and pours an equal amount into 16 vases. When she is finished, Hoda still has 3.75 L of water left. How much water is in each vase ? Give your answer in liters.

_____

Choose the correct answer:

1. Which expression matches the clue "Add 30 to 25 and divide the result by 0.5"?

A. $30 + 25 \div 0.5$

B. $0.5 \times (30 + 25)$

C. $(30 + 25) \div 0.5$

D. $30 \div 0.5 + 25$ (Giza 23)

2. Subtract 2.2 from 6.42 and multiply the result by 3, then the expression is ——

A. $2.2 \times 2 - 6.42$

B. $3 \times 6.42 - 2.2$

C. $6.42 - 2.2 \times 2$

D. $(6.42 - 2.2) \times 3$ (Giza – Abo El Nomrous 23)

3. Which expression matches the clue "Multiply 5.4 by 100, next add 18. Last divide the result by 9"?

A. $5.4 \times 100 + 18 \div 9$

B. $5.4 \times (100 + 18) \div 9$

C. $(5.4 \times 100) + 18 \div 9$

D. $(5.4 \times 100 + 18) \div 9$

4. Which expression matches the clue "Divide 66 by 0.2, then add to the result the product of multiplying 3.6 by 0.1"?

A. $66 \div 0.2 + 3.6 \times 0.1$

B. $66 \div (0.2 + 3.6) \times 0.1$

C. $66 \div (0.2 + 36 \times 0.1)$

D. $(66 \div 0.2 + 3.6) \times 0.1$

5. Which expression matches the clue "Add 7.12 to the result of multiplying 2.1 by 10, then subtract the result from 45"?

A. $2.1 \times 10 + 7.12 - 45$

B. $45 - (2.1 \times 10 + 7.12)$

C. $(2.1 \times 10 + 7.12) - 45$

D. $2.1 \times (10 + 7.12) - 45$

6. Which expression matches the clue "Find the difference between 42 and 37. Multiply by the sum of 2 and 8. Then divide 2,000 by the result"?

A. $2,000 \div (42 - 37 \times 2 + 8)$

B. $2,000 \div [(42 - 37) \times (2 + 8)]$

C. $(42 - 37 \times 2 + 8) \div 2,000$

D. $(42 - 37) \times (2 + 8) \div 2,000$

7. Which expression matches the clue "Giovanni bought 60 fish. He put 5 fish in 9 bowles each". How many fish are left with Giovanni?   (Giza – Awseem 23)

A. $(60 - 5) \times 9$ B. $(60 - 9) \times 5$ C. $60 + 5 \times 9$ D. $60 - 5 \times 9$

8. Which expression matches the clue "Mary run 12.5 kilometers for 3 days each and 11.3 kilometers for 7 days each". How many kilometers did she run in these 10 days?

A. $12.5 \times 3 + 11.3 \times 7$ B. $12.5 \times 3 - 11.3 \times 7$ C. $12.5 \times 7 + 11.3 \times 3$ D. $(12.5 + 11.3) \times (7 + 3)$

Identifying Numerical Patterns

Learn A rule can be used to describe a pattern

Problem

Mr. Ahmed wrote a number pattern.
What rule describes his pattern ?
What will the next number be ?

2 , 5 , 8 , 11 , 14

Look at the number pattern. Find the rule.

Think : What should I do to 2 to get 5 ? What should I do to 5 to get 8 ?

2   5   8   11   14

+3   +3   +3   +3
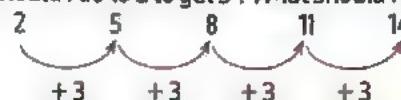
The numbers increase by 3. So, the rule "add 3" describes the pattern. You
can write the rule as "n + 3" such that n represents the previous numbers.
Use the rule to extend the pattern.

2   5   8   11   14   17

+3   +3   +3   +3   +3
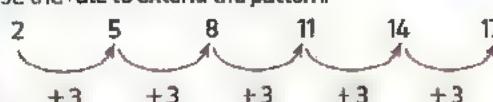
MATH IDEA

A rule must be true
for all the numbers
in the pattern.

So, the next number in the pattern is 17

▶ More Examples :

A 27 , 23 , 19 , 15 , ____

27   23   19   15

−4   −4   −4   −4

The rule is subtract 4 .

- To find the missing number,
  subtract 4.

$$15 - 4 = 11$$

So, the missing number is 11.

The rule : $x - 4$

B 1 , 8 , 64 , 512 , ____

1   8   64   512

×8   ×8   ×8   ×8
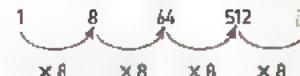
The rule is multiply by 8 .

- To find the missing number,
  multiply by 8.

$$8 \times 512 = 4096$$

So, the missing number is 4096.

The rule : $n \times 8$

Notes for parents :

- Ask your child to describe a pattern and let him/her discover how he/she could find
  the next number in a pattern

257

Lesson 4

Example 1

Look at each set of numbers and identify whether the numbers form a pattern. If yes then identify the rule.

a. 7 , 14 , 28 , 56 ,

b. 2 , 3.5 , 5 , 6.5 , —————

c. 90 , 85 , 70 , 60 ,

d. 8 , 16 , 24 , 30 ,   —————

Solution

a. Yes, the rule : 2 × n

b. Yes, the rule · n + 1.5

c. No

d. No

Example 2

Look at each table and determine the rule use a variable to write the rule.

a.

Input	Output
1	7
2	8
3	9
4	10

Rule : ————

b.

Input	Output
4	1
8	2
12	3
16	4

Rule : ————

c.

Input	Output
10	8
12	10
14	12
16	14

Rule : ————

Solution

a. n + 6

b. n ÷ 4

c. n − 2

Check your understanding

1. Look at each set of numbers and identify whether the numbers form a pattern. If yes then identify the rule.

a. 4 , 5.5 , 8.5 , 14.5

   , ——— , ——— , ——— ,

b. 1 , 6 , 10 , 11 , 16

   ——— , ——— , ——— , ——— ,

2. Look at each table and determine the rule use a variable to write the rule.

a.

Input	Output
10	2
20	4
30	6
40	8

Rule : ————

b.

Input	Output
1	3
3	5
5	7
7	9

Rule : ————

Identifying Numerical Patterns

● REMEMBER   ● UNDERSTAND   ○ APPLY   ♣ PROBLEM SOLVING   From the school book

1. Look at each set of numbers and identify whether the numbers form a pattern.
If yes, then identify the rule.

	Set	Pattern ? (Y / N)	Rule
1.	5 , 10 , 20 , 40 , 80 ...		[El Menia 23]
2.	3 , 6 , 9 , 15 , 21 , 28 ...		
3.	1.5 , 3 , 4.5 , 6 , 7.5 ...		
4.	5 , 3 , 6 , 1 , 7 , 5 ...		
5.	1 , 3 , 9 , 18 , 54 ...		
6.	85 , 73 , 61 , 49 , 37 ...		

2. Look at each table and determine the rule. Use a variable to write the rule.

a.

Input	Output
1	6
2	7
3	8
4	9
5	10

Rule :

b.

Input	Output
1	8
2	16
3	24
4	32
5	40

Rule :

c.

Input	Output
70	10
63	9
56	8
49	7
42	6

Rule :

d.

Input	Output
1	8
2	9
3	10
4	11

Rule :

e.

Input	Output
5	1
10	2
15	3
20	4
25	5

Rule :

f.

Input	Output
35	25
34	24
33	23
32	22
31	21

Rule :

259

g.

Input	Output
3	18
4	24
5	30
6	36
7	42

Rule : ———

h. 📖

Input	Output
3	12
6	24
9	36
12	48

Rule : ———

i. 🗔

Number of Bicycles (input)	Number of wheels (output)
1	2
2	4
3	6
4	8
5	10

Rule :

j.

Input	Output
2	20
3	30
4	40
5	50
6	60

Rule :———

k.

Input	Output
6	1
12	2
18	3
24	4
30	5

Rule :———

l.

Input	Output
1	15
2	2.5
3	3.5
4	4.5
5	5.5

Rule :———

3. Write the rule for each pattern with a variable, then complete the pattern by finding the missing values.

a. 52 , 44 , 36 , 28 , 20 , ——— , ———   Rule : ———

b. 23 , 27 , ——— , 35 , 39 , ——— , ———   Rule : ———

c. 2 , 4 , 8 , 16 , ——— , 64 , ———   Rule : ——— (Giza   Abo El Nomrous 23)

d. 17 , ——— , 21 , 23 , ——— , ———   Rule : ———

e. 32 , 16 , 8 , ——— , 2 , ———   Rule :

(Giza – Awseem 23 , Cairo – El Nouzha 23)

f. ——— , 8 , 15 , ——— , 29 , ———   Rule :

4. Complete the following.

a. The missing number in the pattern 2 , 6 , 18 , ... , 162 is ———

b. The rule in the pattern : 5 , 7 , 9 , 11 , ... is

c. The rule in the pattern : 1 , 4 , 19 , 94 , ... is ———

d. The rule in the pattern : 10 , 20 , 30 , 40 , ... is

e. The rule in the pattern : 7 , 15 , 31 , 63 , ... is ———

f. The next number in the pattern : 0 , 1 , 1 , 2 , 3 , 5 , 8 , 13 , ... is ———

260

5. 📖 Look at the pattern and the two students' work. Then, respond to the prompt.

♣ Write a rule using a variable and explain your thinking.

Yahia's Work

Rule . n × 7

I think the rule is multiply by 7 because 4 × 7 = 28
and 5 × 7 = 35 and it works for each pair.

Walid s Work

Rule : n ÷ 7

I think the rule is divide by 7 because 28 ÷ 7 = 4
and 35 ÷ 7 = 5 and it works for each pair.

Which student is correct? Explain how you know your answer is correct.

Input	Output
28	4
35	5
42	6
49	7
56	8

💡 Challenge

6. Look at the table and determine the rule. Use variable to write the rule.
♣

Input	Output
2	3
4	7
6	11
8	15
10	19

Choose the correct answer.

1. 3, 5, 7, 9, 11, _____ in the same pattern. [Alexandria - West 23]

   A. 21   B. 15   C. 13   D. 12

2. 2, 5, 8, 11, _____ in the same pattern. [El Beheira - Housh Essa 23]

   A. 12   B. 14   C. 16   D. 17

3. The missing value in the pattern 23, 27, ..., 35, is _____ [Port Said 23]

   A. 29   B. 31   C. 30   D. 34

4. The pattern rule of. 35, 31, 27, 23, ... is _____ [El Monofia - Shiben El Kom 23]

   A. $n - 2$ B. $n + 4$ C. $n \times 4$ D. $n - 4$

5. The rule of the pattern: 3, 7, 11, 15, ... is _____ [Ismailia 23]

   A. $n - 4$ B. $n + 4$ C. $n \times 4$ D. $n \div 4$

6. The rule of the pattern: 100, 50, 25, 12.5, ... is _____

   A. $n \div 2$ B. $n \times 2$ C. $n - 50$ D. $n - 25$

7. The rule of the pattern: 3, 6, 12, 24, ... is _____

   A. $n + 3$ B. $n \times 3$ C. $n \times 2$ D. $n \div 2$

8. In the following, the rule of the pattern: 1, 2, 5, 14, ... s _____

   A. $n + 1$ B. $n \times 2 - 1$ C. $n \times 3 - 1$ D. $n \times 2 + 1$

9. In the following table, the rule of the pattern is _____

   A. $n + 1.5$
   B. $n \times 2$
   C. $n + 2$
   D. $n \times 1.5$

Input	Output
3	4.5
4	6
5	7.5
6	9

10. If the input is 45, and the rule is "$n \div 5$", then the output is _____ [Cairo - El Salam 23]

    A. 6   B. 40   C. 9   D. 50

Choose the correct answer.

1. 16 , 8 , 4 , ——— (In the same pattern)

    A. 4   B. 1   C. 2   D. 8

2. $145 =$

    A. $24.5 \times (20 - 10) \div 2$ B. $245 \times (1 - 0.9)$

    C. $24.5 \times 10 - 20 \times 5$ D. $2 \times 100 - 6.5 \times 10$

3. In the opposite table :
   The rule of the pattern is ———

Input	1	2	3	4
Output	5	10	15	20

    A. $n + 4$ B. $n \times 5$

    C. $n + 8$ D. $(n + 3) \times 2$

4. Which expression matches the clue "Add 18.7 to the result of dividing 45.6 by 10, then subtract the result from 99" ?

    A. $45.6 \div 10 + 18.7 - 99$ B. $99 - (45.6 \div 10 + 18.7)$

    C. $(45.6 \div 10 + 18.7) - 99$ D. $(99 - 45.6) \div (10 + 18.7)$

5. The second step to evaluate the expression : $9.3 \times 0.1 + 4.7 - 1.1$ is ———

    A. 9.3×0.1 B. 9.3×4.8 C. $0.93 + 4.7$ D. $0.93 + 1.1$

6. The rule of the pattern : $3 , 9 , 27 , 81 , ...$, is

    A. $n \times 3$ B. $n + 6$ C. $n \times 2 + 3$ D. $n \times 6$

7. The next number in the pattern : $5 , 6.5 , 8 , 9.5 , ...$ is ———

    A. 10   B. 10.5   C. 11   D. 11.5

2. Complete the following.

1. The value of the expression : $(25.6 - 1.9) \div 0.2 + 66.45$ is ———

2. $10 , 30 , 50 ,$ ——— , ——— (In the same pattern)

3. The expression which matches the clue "Subtract 12.4 from the result of multiplying 8.5 by 3.2" is ——— and its value is ———

4. In the pattern : $4 , 11 , 18 , 25 , ...$, the rule is ———

5. The first operation to evaluate the expression : $(94 - 3.4) \div 2 + 55 \times 10$ is ———

6. In the pattern : $1 , 4 , 16 , 64 , ...$, the rule is ———

7. $3.2 \times 3 \div 6 + 1.4 =$ ———

263

8. In the opposite table :

The rule of the pattern is ——

Input	7	9	11	13
Output	9	11	13	16

3. Choose the correct answer.

1. The first operation to solve $983 - 16 \div 8 + 11 \times 10$ is

    A. add   B. subtraction   C. multiply   D. divided

2. $1.2 + 0.24 \times 10 =$ ——

    A. 2.5   B. 2.6   C. 3.6   D. 4

3. The missing number in the pattern . $1.5, 3, ..., 6$ is

    A. 4   B. 4.5   C. 5   D. 3.5

4. Which expression matches the clue "Add 30 to 25 and divide the result by 0.5"

    A. $30 + 25 \div 0.5$ B. $0.5 \times (30 + 25)$ C. $(30 + 25) \div 0.5.$ D. $30 \div 0.5 + 25$

5. $5.4 \times 0.1 - 0.32 =$ ——

    A. 0.68   B. 53.68   C. 0.22   D. 54.2

6. $15 \div 5 + 7 =$ ——

    A. 5   B. 7   C. 3   D. 10

7. The value of this expression : $(7.5 \times 10) + 2.3$ is

    A. 77.3   B. 9.8   C. 19.8   D. 2.78

4. Answer the following questions.

1. Use order of mathematical operations to evaluate : $4.2 + 24 \div 4 + 8$

2. Hany had 1,000 pounds. He bought 5 toys for 33 pounds each and 5 books for 27 pounds each. Write the expression represents the money left with him then evaluate it.

3. Write the expression matches the clue then evaluate it : Subtract 3.1 from 4.21 then multiply the result by 0.1

4. Petra made 20.25 liters of mango juice She sold 10.25 liters and divided the rest into 4 bottles equally. How much mango juice is in each bottle ?

Glossary

A

addend   عدد مضاف

Any number being added. In the equation
$6 + 8 = 14$, 6 and 8 are both addends, 14 is the sum.

algorithm   خوارزمية

A step-by-step method for computing.

area   مساحة

The measure, in square units, of the inside of
a plane figure.

area model   نموذج مساحة المستطيل

A model of multiplication that shows each place
value product.

Associative Property of Addition

خاصية الدمج فى عملية الجمع

States that changing the grouping of three or
more addends does not change the sum.

Associative Property of Multiplication

خاصية الدمج فى عملية الضرب

States that changing the grouping of three or
more factors does not change the product.

B

benchmark   معيار

A known size or amount that can be used as
a reference to help understand a different
size or amount. Benchmarks can be helpful in
estimation and in checking the reasonableness
of answers.

benchmark fractions   كسور معيارية

Fractions that are commonly used for estimation.
Benchmark fractions are useful when comparing
and ordering. One-half, one-third, one-fourth,
three-fourths, and two-thirds are all benchmark
fractions.

brackets   أقواس

Symbols used in pairs to group things together.

C

capacity   سعة

The amount of liquid a container can hold.

common factor   عامل مشترك

Any factor that is shared by two or more numbers.
Six is a common factor of both 12 and 24.

common multiple   مضاعف مشترك

Any multiple that is shared by two or more numbers.
Six is a common multiple of both 2 and 3.

Commutative Property of Addition

خاصية الإبدال فى عملية الجمع

States that changing the order of the addends
does not change the sum.

Commutative Property of Multiplication

خاصية الإبدال فى عملية الضرب

States that changing the order of the factors
does not change the product.

compatible numbers   أعداد لها قيمة مميزة

Numbers that are easy to compute mentally
and are close in value to the actual numbers.
Compatible numbers can be used when
estimating.

compose   يكوّن

To put together smaller numbers to make larger
numbers.

Composite number   عدد غير أولى

A positive number that is not prime.

D

decompose   يحلل

To separate a number into two or more parts.

difference   فرق

The amount that remains after one quantity is
subtracted from another. The answer in
a subtraction problem.

digit   رقم

Any of the symbols 0 ,1 ,2 ,3 ,4 ,5 ,6 ,7 ,8 or 9.
[Also known as base 10 numerals.]

Distributive Property of Multiplication

خاصية التوزيع فى الضرب

States that whether the numbers in parentheses
are added before or after multiplication, the
results are the same.

dividend   مقسوم
A number that is divided by another number.
Fifty-six is the dividend in $56 \div 8 = 7$

division   عملية القسمة
Splitting into equal parts or groups also known as
fair sharing.

divisor   مقسوم عليه
The number by which another number is divided.
Eight is the divisor in $56 \div 8 = 7$

E

equation   معادلة
A mathematical sentence with an equal sign.
The amount on one side of the equal sign has the
same value as the amount on the other side.
$4 + 3 = 7$

equivalent   مكافئ
Having the same value.

estimate   يقدّر
To find a number close to an exact amount,
an estimate tells about how much or about
how many.

expanded form   صيغة ممتدة
A way to write numbers that shows the place
value of each digit. $263 = 200 + 60 + 3$

expression   تعبير رياضى
A mathematical phrase without an equal sign.
$n + 4$

F

factors   عوامل
Numbers we can multiply together to get
another number

factor pairs   أزواج عوامل العدد
Sets of two numbers that multiply together to
reach a certain product.

factor tree   شجرة العوامل
A diagram that shows all the factors of
a number, with the number appearing
at the top of the "tree" and factors of that
number appearing in "branches" until each
branch ends in prime number

finite   نهائى
Not infinite. Has an end.

fraction   كسر اعتبادى
A way to describe a part of a whole or a part of
a group by using equal parts

G

greatest common factor (GCF)
العامل المشترك الأكبر
The greatest number that is a factor of two (or
more) other numbers.

H

Hundredths   أجزاء من المائة
In the decimal numeration system, Hundredths
is the name of the next place to the right of
Tenths.

I

Infinite   لا نهائى
Without an end. Not finite.

input   مدخل
The known variable you feed into an expression.

inverse operation   عملية عكسية
Opposite operations. They are operations that
reverse the effect of another operations.

L

least common multiple (LCM)
المضاعف المشترك الأصغر
The smallest positive number that is a multiple
of two or more numbers.

M

midpoint strategy   أستراتيجية نقطة المنتصف
A method in which students use the midpoint of
two numbers on number line to help visualize
rounding numbers.

multiples   مضاعفات
Numbers created by multiplying two factors.

multiplication   عملية الضرب
The process of finding the product of two or more
numbers "repeated addition".

267

multiplicative comparison

مقارنة باستخدام عملية الضرب

A way to compare quantities using multiplication.

N

numerical pattern

نمط عددي

A list of numbers that follow a certain sequence or pattern.

O

Order of Operations

ترتيب إجراء العمليات

A set of rules tells us the order in which to compute.

1. For operations within parentheses
   a. multiply or divide from left to right
   b. add or subtract from left to right

2. For operations within brackets
   a. multiply or divide from left to right
   b. add or subtract from left to right

3. For operations outside parentheses
   a. multiply or divide from left to right
   b. add or subtract from left to right

output

مخرج

What comes out of the function; the solution.

P

parentheses

أقواس

Grouping symbols for operations. When simplifying an expression, the operations within the parentheses are evaluated first.

partial products

نائج عملية الضرب بالتجزئة

Any of the multiplication results we get leading up to an overall multiplication result.

partial products model

نموذج إيجاد نائج عملية الضرب بالتجزئة

A model that breaks numbers down into their factors or palce values to make multiplication easier.

partia. quotients model

نموذج إيجاد خارج عملية القسمة بالتجزئة

A method of dividing in which multiples of the divisor are subtracted from the dividend, and then the partial quotients are added together.

pattern

نمط

A repeating or growing sequence or design.

place value

قيمة مكانية

The value of the place of a digit in a number.

powers of ten

قوى العدد ١٠

A set of mathematical notations that allow you to express any number as a product of multiples of 10.

prime factorization

التحليل إلى عوامل أولية

Finding which prime numbers multiply together to produce the origina. number.

prime number

عدد أولى

A whole number greater than 1 that has exactly two different factors, 1 and itself.

product

نائج الضرب

The answer to a multiplication problem.
In $6 \times 7 = 42$, 42 is the product.

Q

quotient

خارج القسمة

The answer to a division problem.

R

reasonable

معقول

Makes sense according to the numbers and operation used.

regroup

بعيد التسمية

To rearrange numbers into groups of 10 when performing mathematical operations.

regrouping

إعادة التسمية

The process of making groups of tens when adding or subtracting two-digit numbers (or more).

remainder

باقى القسمة

The amount left over when one number is divided by another.

round

يقرب

A way to change a number to a shorter or simpler number that is very close to the original number

rule قاعدة
something that happens every time
(for example : 2, 5, 8, 11 ... the rule is + 3).

S

sequence تسلسل
A set of numbers arranged in a special order or pattern.

simplify يبسط
To express a fraction in simplest form.

standard algorithm for multiplication
خوارزمية الضرب المعيارية
Strategy for multiplying by using partial products or multiplying in parts.

standard form صيغة قياسية
A common or usual way of writing a number using digits. 12,376 is in standard form.

sum مجموع
The answer to an addition problem.

T

Tenths أجزاء من عشرة
In the decimal numeration, Tenths is the name of the place to the right of the decimal point.

Thousandths أجزاء من ألف
The value of a digit that is the fourth position from the right when describing whole number place value.

U

unknown مجهول
Part of an expression or equation that has to be found; a variable that can be represented in a problem by a letter.

V

value قيمة
How much a digit is worth depending on where it is in a number; the result of a calculation.

variable متغير
A letter or symbol that represents a number. for example : in $5 \times b = 10$, b is the variable.

EL-MOASSER
Mathematics
By a group of supervisors
STEP BY STEP REVISION
FREE PART
1
- Cumulative Assessments
- Monthly Tests
- General Revision
- Directorates Exams
FIRST TERM
5th PRIMARY

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EL-MOASSER

Mathematics

By a group of supervisors

STEP BY STEP REVISION

FREE PART

1

- Cumulative Assessments
- Monthly Tests
- General Revision
- Directorates Exams

FIRST TERM

5th PRIMARY

Cumulative Assessment **1**　　On lesson 1 unit 1

1. Complete.

a. In 562.417 , the digit 7 is in the ＿＿＿＿ place and its value is ＿＿＿＿

b. The decimal form of 5 and 17 thousandths is ＿＿＿＿

c. The word form of 8.005 is ＿＿＿＿

d. In 36.291 , the digit 9 represents ＿＿＿＿

e. Five ones and 48 thousandths written as ＿＿ ＿＿＿

f. The value of the digit 0 in the number 45.209 is ＿＿＿＿

2. Choose the correct answer.

a. Sixty-four and sixty-four thousandths = ＿＿＿＿

　　A. 64.64　　　　B. 60.40　　　　C. 64.064　　　　D. 64.046

b. $\dfrac{575}{1,000} = $＿＿＿＿

　　A. 5.75　　　　B. 0.575　　　　C. 557,000　　　　D. 0.557

c. The value of the digit 4 in the number 3.514 is ＿＿＿＿

　　A. 40,000　　　　B. 400　　　　C. 0.4　　　　D. 0.004

d. In the number 1,425.367 , which digit is in the Thousandths place ?

　　A. 1　　　　B. 7　　　　C. 4　　　　D. 6

3. In the number 59.841

a. What is the value of 1 ?

b. What does the digit 9 represent ?

c. What is the value of the digit in the Hundredths place ?

4. Write each of the following in word form.

a. 4.014 ＿＿＿＿＿＿＿＿＿＿＿＿

b. 0.207 ＿＿＿＿＿＿＿＿＿＿＿＿

c. 40.14 ＿＿＿＿＿＿＿＿＿＿＿＿

d. 500.005 ＿＿＿＿＿＿＿＿＿＿＿＿

5

Cumulative Assessment **2** **Till lessons (2 & 3) unit 1**

1. Choose the correct answer.

a. $6.5 \times$ _____ $= 6,500$

   A. 1   B. 10   C. 100   D. 1,000

b. $652 \div 10 =$ _____

   A. 65.2   B. 6,520   C. 6.52   D. 0.652

c. $35.602 = 35 +$ _____

   A. 602   B. 0.62   C. 0.602   D. 0.02

d. Five and five thousandths = _____

   A. 55,000   B. 5.05   C. 5,005   D. 5.005

2. Complete.

a. $3.7 \div 10 =$ _____

b. $25.164 \times 100 =$ _____

c. 7 thousand and 48 hundredths = _____ (decimal form)

d. In 452.09 , the digit 5 is in the _____ place and its value is _____

e. In 57.246 , the digit 6 represents _____

f. $5,000 + 20,000 + 0.9 + 6 + 0.001 =$ _____

3. In the following problem, record the number in the place-value chart and decompose the number 17.439 in expanded form and in another way then, answer the questions.

Thousands	Ones			•	Decimals		
0	H	T	O	•	Tenths	Hundredths	Thousandths
				•			

a. 1st way (expanded form) : _____

b. 2nd way : _____

c. What is the value of 3 ? _____

d. What does the digit 4 represent ? _____

e. What is the value of the digit in the Thousandths place ? _____

f. The value of the digit 4 _____ (increased/decreased) when dividing by 10 from _____ to _____

6

Cumulative Assessment **3** **Till lesson 4 unit 1**

1. Compare. Write (< , > or =).

   a. 0.005 ◯ 0.05

   b. 10.1 ◯ 10.011

   c. 3.198 ◯ 3.2

   d. 24.6 ◯ 24.600

   e. $14\frac{315}{1,000}$ ◯ 41.315

   f. 2 ones , 2 hundredths ◯ 2.2

   g. Fifteen thousandths ◯ 0.01 + 0.005

2. Choose the correct answer.

   a. 36.214 × 100 = _____

      A. 36.214   B. 362.14   C. 3,621.4   D. 36,214

   b. 5.361 > _____

      A. 5.37   B. 5.362   C. 5.366   D. 3.561

   c. 316 ÷ 10 = _____

      A. 3.16   B. 31.6   C. 3,160   D. 0.316

   d. In the problem 74.8 ÷ 10. The value of the digit 4 decreased from 4 to _____

      A. 40   B. $\frac{4}{10}$ C. $\frac{4}{100}$ D. 0.004

3. Order from least to greatest.

   a. 32.141 , 23.141 , 32.411 , 23.411

   b. 1.351 , 1.135 , 1.531 , 1.315

4. Use the place-value chart to solve the following problem. Fill in the blanks to show how the value of each digit also changed.

   85 × 10 = _____

Thousands	Ones			•	Decimals	
O	H	T	O	•	Tenths	Hundredths
				•		
				•		

   a. The value of the whole number _____ (increased/decreased) when multiplying by 10

   b. The value of the digit 5 _____ (increased/decreased) when multiplying by 10

      from _____ to _____

   7

Cumulative Assessment **4** **Till lesson 5 unit 1**

1. Complete.

a. $76.514 \approx$ _____ (to the nearest Hundredths)

b. $0.9986 \approx$ _____ (to the nearest Thousandths)

c. $10.18 \approx$ _____ (to the nearest whole number)

d. $731.56 \div 100 =$ _____

2. Choose the correct answer.

a. In the number 432.519 , which digit is in the Hundredths place ?

   A. 4   B. 3   C. 5   D. 1

b. $701.008 = 700 + 1 +$ _____

   A. 0.080   B. 0.800   C. 8   D. 0.008

c. 5 ones , 5 thousandths ◯ 5.05

   A. >   B. <   C. =

d. $3.8\square 9 \approx 3.85$ (to the nearest Hundredths)

   A. 3   B. 4   C. 5   D. 6

e. Rounding the number 175,329.275 to the nearest Hundred Thousands is

   A. 100,000.275   B. 200,000   C. 275,329   D. 100,000

f. $19.58 \approx$ _____ (to the nearest Tenths)

   A. 18.6   B. 19   C. 20   D. 19.6

g. Rounding 24.3 to the nearest whole number is _____

   A. 23   B. 24   C. 243   D. 25

3. Write three decimals , if we round each of them to the nearest Hundredths becomes 15.36

_____

4. Label the midpoint of the number line. Place the decimal number 3.54 at its proper location. Then , round it to the nearest Tenth.

$3.54 \approx$ _____

3.6

3.5

Cumulative Assessment +5 Till lessons (6 & 7) unit 1

1. Find the result of each of the following.

   a. 15.36
       + 7.97
       _____

   b. 38.56
       + 19.097
       _____

   c. 2.65 + 9.3 =

   d. 17.4 + 5.6 = ——

2. Complete.

   a. 7 Hundredths + 62 Thousandths = _____ Thousandths

   b. 14.72 + _____ = 15.89

   c. 34.567 ≈ _____ (to the nearest Hundredths)

   d. The place value of the digit 0 in the number 3.506 is _____

   e. 36.24 ÷ 10 = _____

   f. 500 + 5 + 0.5 + 0.005 = _____

3. Use the place-value chart to solve each problem. Fill in the blanks to show how the value of each digit also changed.

   189 ÷ 100 = _____

Thousands	Ones			•	Decimals	
O	H	T	O	•	Tenths	Hundredths
				•		
				•		

   a. The value of the whole number _____ (increased/decreased) when dividing by 100

   b. The value of the digit 8 _____ (increased/decreased) when dividing by 100 from _____ to _____

   c. The value of the digit 9 _____ (increased/decreased) when dividing by 100 from _____ to _____

   d. The value of the digit 1 _____ (increased/decreased) when dividing by 100 from _____ to _____

4. Mathew has 136.20 L.E. His brother Giovannie has 64.30 L.E. What is the total they have all together?

_____

Cumulative Assessment 6 Till lessons (8 to 10) unit 1

1. Find the result of each of the following.

a.
$$0.5$$
$$- \quad .375$$
——

c. $5.473 - 3.362 =$ ——

b. $100 - 47.85 =$ ——

d.
$$0.781$$
$$- 0.531$$
——

2. Complete.

a. $2.45 \times 10 =$ ——

b. —— $- 41.41 = 3.8$

c. The place value of the digit 6 in the number 35.264 is ——

d. $55.55 =$ —— (expanded form)

e. $34.179 \approx$ —— (to the nearest Tenths)

f. 24 Hundredths – 24 Thousandths – —— Thousandths.

3. Compare. Write (< , > or =).

a. $99.89 - 90.09$ ◯ $10 - 1.01$

b. $0.2 - 0.05$ ◯ $4.9 - 4.75$

c. $7.9 + 2.3$ ◯ $11.7 - 1.3$

d. 75.36 ◯ 75.360

4. Choose the correct answer.

a. $371.5 \div 100 =$ ——

A. 37.15   B. 3,715   C. 3.715   D. 0.3715

b. $2.4 >$ ——

A. 2.40   B. 4.2   C. 1.956   D. 3.5

c. $340 + 0.3 + 0.04 =$

A. 34.34   B. 340.304   C. 34.304   D. 340.34

d. 5 Hundredths + 13 Thousandths = —— Thousandths.

A. 63   B. 18   C. 513   D. 37

10

Cumulative Assessment· 7 Till lesson 11 unit 1

1. **Complete.**
   a. The decimal form of 7 and 7 hundredths is ————
   b. $7 \div 100 =$ ————
   c. $2.463 \approx$ ———— (to the nearest whole number)
   d. 3 Tenths + 36 Thousandths = ——— Thousandths.
   e. $500 + 0.5 + 30 + 0.03 =$ ——— (in standard form)
   f. ———— $-2.79 = 3.21$

2. **Compare. Write (<, > or =).**
   a. $3.5 - 2.1$ ◯ $3.5 + 2.1$
   b. 31.46×10 ◯ $31.46 \div 10$
   c. $51.5 + 5.15$ ◯ $5.15 + 51.5$
   d. 2.14×10 ◯ $214 \div 10$

3. **Choose the correct answer.**
   a. 71 Hundredths + 9 Hundredths = ———— Tenths.
      A. 88   B. 80   C. 800   D. 8
   b. $14.27 +$ ———— $= 15.89$
      A. 1.53   B. 1.6   C. 1.62   D. 1.65
   c. $55.5 - 5.55 =$ ————
      A. 50.05   B. 50.5   C. 49.95   D. 49.59
   d. 7 Tenths − 7 Hundredths = ————
      A. 6.3   B. 0   C. 0.36   D. 0.63
   e. The place value of 3 in 2.435 is ————
      A. Tens   B. Tenths   C. Hundredths   D. Thousandths
   f. $7,368 \div$ ———— $= 73.68$
      A. 10   B. 100   C. 1,000   D. 0.10

4. Mona had 95.5 L.E. She spent 35.75 L.E. Find the remainder with her.

5. Eslam has 29.75 L.E. and Sameh has $15\frac{1}{2}$ L.E. How much money they have together?

11

Cumulative Assessment **8**   Till lesson 1 unit 2

1. Choose the correct answer.

a. $x + 2.45 - 1.7$ is called ———

   A. equation.　　B. value.　　C. expression.　　D. neither.

b. Five ones , forty-seven thousandths = ———

   A. 57.40　　B. 5.740　　C. 5.47　　D. 5.047

c. Round the decimal number 79.44 to the nearest Tenths is

   A. 80　　B. 79　　C. 79.4　　D. 79.5

d. Which of the following is an equation ?

   A. $3.54 - x$　　B. $M + 2.5$　　C. $4 \times z$　　D. $5.34 + 1.7 = 7.04$

e. Nagi subtracted 3.24 from a number to get 3.42 , then the suitable equation is

   A. $3.42 - 3.24 = x$　　　　B. $3.42 - x = 3.24$

   C. $x - 3.24 = 3.42$　　　　D. $x + 3.24 = 3.42$

2. Complete.

   a. $364.1 \div 100 =$ ———

   b. The value of the digit 0 in the number 46.105 is ———

   c. $3.5 - 1.365 =$ ———

   d. The word form of the decimal 13.013 is ———

   e. $700 + 7 + 0.07 =$ ———

3. A class contains 60 pupils , 34 from them are boys , write two equations to find the number of girls.

   ———————————————

   ———————————————

4. Youssef has 30.25 L.E. and Tamer has 34.75 L.E. Find the total money with them.

   ———————————————

   ———————————————

Cumulative Assessment **9** Till lessons (2 & 3) unit 2

1. Complete.
   a. The variable in the equation $x + 5 = 9$ is _____
   b. The value of the digit 5 in the number 30.005 is _____
   c. The equation which represents the model

6.8	
m	3.2

   is _____

   d. $56.2 \times 100 =$ _____
   e. 3 Tenths – 3 Thousandths = _____

2. Find the value of each variable in the following part-to-whole bar models.

   a.

87.415	
m	29.125

   b.

h	
41.126	25.123

3. Choose the correct answer.
   a. $7,000 + 700 + 70 + 0.007 =$ _____
      A. 777.7   B. 7,770.7   C. 7,770.07   D. 7,770.007
   b. Seventy-one and seventeen hundredths in the standard form is _____
      A. 71.17   B. 701.17   C. 17.70   D. 71.70
   c. $346 \div 10 =$ _____
      A. 3460   B. 3.46   C. 34.6   D. 0.346
   d. $29.99 \approx$ _____ (to the nearest Tenth)
      A. 2910   B. 29.9   C. 30.99   D. 30

4. If we add 3.29 to a number to get 7.254, then write the suitable equation and solve it.

5. What is the story?
   Write a story problem for the following equation, then solve it $3.25 + 6.25 = n$

13

Cumulative Assessment **10** **Till lessons (4 & 5) unit 2**

1. **Factorize the following numbers to their prime factors , then find the G.C.F for them.**

   a. 12 and 18

   12 = _____

   18 = _____

   G.C.F = _____

   b. 28 and 42

   28 = _____

   42 = _____

   G.C.F = _____

2. **Find the common factors and the greatest common factor G.C.F of 8 and 24**

   a. Factors of 8 : _____

   b. Factors of 24 : _____

   c. Common factors : _____

   d. G.C.F : _____

3. **Complete.**

   a. _____ is the only even prime number.

   b. The prime factors of 14 are _____ and _____

   c. 3 Thousands and 3 Thousandths = _____

   d. 9 Hundredths – 81 Thousandths = _____ Thousandths.

   e. The smallest prime odd number is _____

4. **Find the missing variables.**

   a. $b \times 8 = 24$

   b = _____

   b. $3.2 + a = 4.7$

   a = _____

   c. $12 \times N = 12$

   N = _____

   d. $m - 1.41 = 2.7$

   m = _____

   e. $38.1 - K = 35.1$

   K = _____

   f. $5.5 + L = 7$

   L = _____

   g. $n \times 123 = 0$

   n = _____

   h. $y - 4.62 = 1.7$

   y = _____

14

1. Two numbers, the prime factors of the first are 2, 3 and 5 and the prime factors of the second are 2, 2, 3 and 5, then :

   a. The first number = ___ ___

   b. The second number = _____

   c. G.C.F = _____

2. Complete.

   a. The common multiple for all numbers is _____

   b. The common factor for all numbers is _____

   c. $7,000 + 70 + 0.7 + 0.007 =$ _____

   d. $9,561 \div 100 =$ _____

   e. $3.5 + 16.014 =$ _____

   f. 7 Hundredths − 35 Thousandths = _____ Thousandths.

   g. $27 = 3 \times$ _____ hence 27 is a multiple of _____ and is also a multiple of _____

3. To find the L.C.M of 6 and 4.

   • Multiples of 6 _____

   • Multiples of 4 _____

   • Common multiples of 6 and 4 (other than 0) _____

   • L.C.M of 6 and 4 _____ _____

4. Find the L.C.M of 12 and 9.

   12 = _____

   9 = _____

   L.C.M = _____

   12   9

5. Use the prime factorization of each of the following numbers to find the L.C.M

   a. 8 and 24

   8 = _____

   24 = _____

   L.C.M = _____

   b. 10, 12 and 15

   10 − _____

   12 = _____

   15 = _____

   L.C.M = _____

15

1. Use the prime factorization of each of the following numbers, then find the G.C.F and L.C.M:

   a. 12 and 14

   12 = _____

   14 = _____

   G.C.F = _____

   L.C.M = _____

   b. 10 and 15

   10 = _____

   15 = _____

   G.C.F = _____

   L.C.M = _____

2. Two numbers, the prime factors of the first are 2, 2, 5 and 5 and the prime factors of the second are 2, 2, 5 and 7.

   a. The first number = _____

   b. The second number = _____

   c. Their G.C.F = _____

   d. Their L.C.M = _____

3. Complete.

   a. The place value of the digit 7 in the number 3.267 is _____

   b. 3 Hundredths – 25 Thousandths = _____ Thousandths.

   c. The common factor for all numbers is _____

   d. The smallest prime number is _____

   e. 7.3 – 3.71 = _____

   f. 26.349 × 100 = _____

4. Two clocks are turned on in the same time. One clock chimes every 15 minutes. The other clock chimes every 25 minutes. In how many minutes will they chime together? Do you have to find the G.C.F or the L.C.M? What is the answer?

   _____

   _____

5. Giovanni has 18 oranges and 12 bananas. He wants to make fruit baskets with the same number of each fruit in each basket. What is the greatest number of fruit baskets he can make? Do you have to find the G.C.F or the L.C.M? What is the answer?

   _____

   _____

   _____

16

Cumulative Assessments on UNIT 3

Cumulative Assessment 13 — Till lessons (1 & 2) unit 3

1. Choose the correct answer.

a. $4 \times 354 = (4 \times 300) + (4 \times 50) + ($ ———— $)$

    A. 4×4 **B.** 4×40 **C.** 4×400 **D.** 40×40

b. $(100 + 70 + 6) \times (20 + 9) =$ ————

    A. 176×209 **B.** 176×29 **C.** 176×92 **D.** 176×902

c. $7,000 + 50 + 400 + 0.6 + 0.07 =$ ————

    A. 754.67 **B.** $7,540.67$ **C.** $7,450.67$ **D.** $7,450.607$

d. $9,571 \div 100 =$ ——

    A. $957,100$ **B.** 957.1 **C.** 95.71 **D.** 9.751

e. $5.971 \approx$ ———— (to the nearest Tenths)

    A. 5.97 **B.** 5.10 **C.** 5.9 **D.** 6

2. Complete the following.

a. The common multiple of all numbers is ————

b. The G.C.F of 3 and 5 is ————

c. $567 \times 3 = (500 \times 3) + ($ ———— $\times 3) + (60 \times 3)$

d. $5 \times$ ———— $= 20,000$

e. The value of zero in the number 3.04 is ————

f. $17 \times 509 = (10 + 7) \times ($ ———— $\div 9)$

g. 50 Thousandths + 3 Hundredths = ———— Hundredths

3. Solve each of the following problems using an area model.

a. 304×14 b. 5×123 c. 23×44

4. Use the distributive property to solve each of the following.

a. 3×76 b. 12×213 c. 92×34

Cumulative Assessment **14** **Till lessons (3 & 4) unit 3**

1. Choose the correct answer.
   a. What is the ones digit of the product of 953 × 23 will be without solving the whole problem?

   A. 0   B. 2   C. 3   D. 9

   b. 15 × 21 = _____

   A. 135   B. 513   C. 315   D. 3,015

   c. 3,496 = _____

   A. 152 × 23   B. 152 × 32   C. 215 × 23   D. 215 × 32

   d. 9,702 ÷ 10 = _____

   A. 97.2   B. 970.2   C. 97.02   D. 9.702

   e. 4.3 × 1,000 = _____

   A. 43   B. 4,300   C. 43,000   D. 43

2. Find G.C.F and L.C.M of the following.
   a. 12 and 18

   b. 60 and 45

3. Find the result.
   a. 3,241 × 54

   b. 712 × 36

   c. 4 × 589

   d. 8.5 − 3.64

   e. 21.46 + 7.491

   f. 5 − 3.6

4. Determine the values of the missing digits and then find the product.

   a.
   ```
         3 8
   ×     5 6
       A 2 8
   + B 9 0 0
       C
   ```
   A = _____
   B = _____
   C = _____

   b.
   ```
       2 4 0 3
   ×       5 4
       9 B 1 2
   + 1 A 0 C 5 0
       D
   ```
   A = _____
   B = _____
   C = _____
   D = _____

5. Fill in the area model starting at letter A.

	300	20	5
10	F.	E.	D.
2	C.	B.	A.

   Final product : _____

18

Cumulative Assessment **15**   **Till lesson 5 unit 3**

1. Complete.

a. The place value of 3 in the number 0.213 is ————

b. ———— $\times 9 = 900$

c. $120 \times 30 =$ ————

d. $9.3 - 5.184 =$ ————

e. $(3 \times 200) + (3 \times 50) + (3 \times 7) = 3 \times$ ————

2. Use the following area models to write the distribution equation.

a.

	100	20	7
5	500	100	35

b.

	30	6
20	600	120
2	60	12

3. Choose the correct answer.

a. The value of the digit 4 in the number 98.764 is ————

   A. $\dfrac{4}{10}$ B. $\dfrac{4}{1,000}$ C. 0.04   D. 4.000

b. The standard form of the number six thousands and six thousandths is ————

   A. 6.6   B. 60.06   C. 600.006   D. 6,000.006

c. Hany runs 110 minutes every day. What is the number of running minutes in 15 days ?

   A. 1,065   B. 1,605   C. 1,560   D. 1,650

d. What is the unknown value in the area model of 21×53?

   A. 60   B. 600

   C. 6   D. 6,000

	50	3
20	1,000	?
1	50	3

e. 7 Hundredths – 7 Thousandths = ———— Thousandths.

   A. 7   B. 0   C. 63   D. 77

4. A factory produces 4,550 toys every month. Another factory produces 7,350 toys every month. Find the difference between their product in ten months.

5. Sameh has 300 pounds to spend on new clothes. He buys 12 pair of socks for 21 pounds each. What is the left money with Sameh now ?

19

Cumulative Assessment | **16** | **Till lessons (1 & 2) unit 4**

1. Choose the correct answer.

a. In the opposite area model,
which choice best represents the problem?

A. 2,835 ÷ 21 = 100,305

B. 2,835 ÷ 21 = 180

C. 2,835 ÷ 21 = 135

D. 2,835 ÷ 12 = 135

	100	10	10	10	5
	2,835	735	525	315	105
21	−2,100	−210	−210	−210	−105
	735	525	315	105	0

b. 5,555 ÷ 55 =

A. 11   B. 101   C. 1,001   D. 110

c. In the equation 666 ÷ 19 = 35 R1, the remainder is _____

A. 666   B. 19   C. 35   D. 1

d. 7,641 ÷ 100 = _____

A. 7.641   B. 76.41   C. 764.1   D. 0.7641

e. 9,000 + 50 + 300 + 0.6 + 0.01 = _____

A. 9,350.16   B. 9,350.61   C. 935.61   D. 935.16

2. Use the area model strategy to solve the following division equations.

a. 1,035 ÷ 9

b. 3,813 ÷ 31

3. Find the result of each of the following.

a. 15.36 − 7.854 = _____

b. 309 × 21 = _____

c. 41.14 + 4.114 = _____

d. 60 ÷ 9 = _____

4. If 16 plums are packed 4 in a bag, then how many bags will there be?

20

Cumulative Assessment **17** Till lessons (3 & 4) unit 4

1. Write the division equation that matches the multiplication problem.

a. $24 \times 143 = 3{,}432$

b.
$$
\begin{array}{r}
1\ 1\ 8 \\
\times\quad 2\ 5 \\
\hline
2{,}9\ 5\ 0
\end{array}
$$

c.
$$
\begin{array}{r}
1\ 0\ 4 \\
\times\quad 1\ 6 \\
\hline
1{,}\ 6\ 6\ 4
\end{array}
$$

2. Divide using the standard algorithm for division.

a. $25\overline{)535}$

b. $46\overline{)8{,}004}$

c. $14\overline{)1{,}414}$

3. Choose the correct answer.

a. The division equation that matches $113 \times 24 = 2{,}712$ is _____

 A. $113 \div 24 = 2{,}712$ B. $113 \div 2{,}712 = 24$ C. $24 \div 2{,}712 - 113$ D. $2{,}712 \div 24 = 113$

b. $1{,}001 \times 25 =$ _____

 A. 2,525 B. 25,025 C. 250,025 D. 5,225

c. _____ $+ 534 + 0.17 = 17{,}534.17$

 A. 17 B. 170 C. 1,700 D. 17,000

d. $3.6 + 5.411 =$ _____

 A. 5.447 B. 8.1011 C. 8.417 D. 9.011

e. 5 hundred and 5 hundredths = _____

 A. 500.05 B. 50.05 C. 500.500 D. 5.5

4. Find the result of.

a. $2{,}401 \times 36 =$ _____

b. $3{,}921 \div 35 =$ _____

c. $17.51 + 36.098 =$ _____

d. $214.6 - 34.14 =$ _____

5. Solve each of the following equations.

a. $k + 2.14 = 4.12$

b. $m - 7.02 = 3.2$

21

Cumulative Assessment **18** Till lesson 5 unit 4

1. Find the result of each of the following.

a. $213.5 + 17.64$

b. $23.9 - 17.856$

c. $3,201 \times 23$

d. $25 \overline{)3,075}$

2. Complete.

a. In the division equation $29 \div 3 = 9\,R\,2$, the remainder is _____

b. $754.6 \div 100 =$ _____

c. The value of the digit 0 in the number 51.203 is _____

d. If $125 \times 5 = 625$, then $626 \div 5 = 125\,R$ _____

e. The L.C.M of the two numbers 3 and 5 is _____

f. _____ is the common factor for all numbers.

3. Choose the correct answer.

a. $91,000 = 91 \times$ _____

   A. 10   B. 100   C. 1,000   D. 10,000

b. $7\,km =$ _____ m.

   A. 7,000   B. 700   C. 70   D. 7

c. If $35 \times 121 = 4,235$ then $4,236 \div 35 =$ _____

   A. 121   B. 121 R1   C. 121 R2   D. 121 R3

d. By using the bar model

3.16	
m	2.8
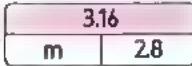
the value of m is _____

   A. 2.8   B. 1.64   C. 18   D. 0.36

4. Compare. Write (<, > or =).

a. $3.4 + 0.21$ ◯ $0.34 + 2.1$

b. 312×11 ◯ 346×11

c. $36 \div 9$ ◯ $36 \div 5$

d. $4 + 0.4 + 0.01 + 0.003$ ◯ 4.413

5. In one year, a factory used 13,250 meters of cotton, 6,850 fewer meters of silk than cotton, and 1,500 fewer meters of wool than silk.

How many meters of fabric were used in all?

_____

_____

_____

22

Cumulative Assessments on UNIT 5

1. Complete.

a. $0.576 \times 100 =$ _____

b. $1.2 \times 0.2 =$ _____

c. $0.25 \times 4 =$ _____

d. $0.01 \times 0.1 =$ _____

e. $700 + 5,000 + 60 + 9 + 0.04 + 0.1 =$ _____

f. $214.081 \simeq$ _____ (to the nearest Hundreds)

2. Choose the correct answer.

a. $3.94 \times 10 =$ _____

    A. 3.94   **B.** 0.394   **C.** 39.4   **D.** 394

b. $9.58 \times$ _____ $= 958$

    A. 1   **B.** 10   **C.** 100   **D.** 1,000

c. $9.734 \times 10 \approx$ _____ (to the nearest Tenths)

    A. 97.34   **B.** 97.4   **C.** 10   **D.** 97.3

d. 3,264 thousandths = _____

    A. 3.264   **B.** 32.64   **C.** 326.4   **D.** 0.3264

e. $4,444 \div 44 =$ _____

    A. 11   **B.** 101   **C.** 110   **D.** 1,001

3. Put the suitable relation ($<$, $>$ or $=$).

a. 4.4×0.1 ◯ 0.044×10

b. 5×0.001 ◯ 0.5×0.01

c. 15 Hundred ◯ 15 Hundredths

d. 25 km ◯ 2,500 m

e. $690 \div 15$ ◯ $960 \div 15$

4. Find the unknown letters in each of the following.

a. $496 = 4 \times [a] + 9 \times [b] + 6$ $a =$ _____ , $b =$ _____

b. $305.09 = 3 \times [m] + 5 + 9 \times [n]$ $m =$ _____ , $n =$ _____

c. $24.306 = 2 \times [k] + 4 + 3 \times [l] + 6 \times [r]$ $k =$ _____ , $l =$ _____ , $r =$ _____

d. $7.043 \times 1,000 = [s]$ $s =$ _____

23

1. Complete.

a. If $19 \times 4 = 76$, then $1.9 \times 0.4 =$ _____

b. If $152 \times 7 = 1,064$, then $1.52 \times 0.7 =$ _____

c. $0.479 \times 100 =$ _____

d. $23.46 \approx$ _____ (to the nearest Tenths)

e. 16 Thousands and 16 Thousandths = _____

f. $18.3 - 7.461 =$ _____

2. Choose the correct answer.

a. By using the fact $143 \times 6 = 858$, $1.43 \times 0.6 =$ _____

  A. 8,580   B. 85.8   C. 8.58   D. 0.858

b. $5.31 \div 10 =$ _____

  A. $500 + 30 + 1$ B. 531 Thousandths

  C. 531 Hundredths   D. 531 Tenths

c. _____ isn't a prime number.

  A. 1   B. 2   C. 3   D. 5

3. Look at the area models, use the information provided to find the missing numbers. Then, find the product.

a.

	2	0.5
?	14	?
0.4	?	0.2

product : _____

b.

	2	?	0.08
?	6	1.5	?
0.5	1	?	0 040

product : _____

4. Find the result of each of the following.

a. $321.9 + 15.84 =$ _____   b. $25.41 - 17.941 =$ _____

c. $125 \times 34 =$ _____   d. $3,830 \div 25 =$ _____

5. Use an area model to find.

a. 4.2×5.6 b. 1.2×3.25

Cumulative Assessment | **21** | **Till lessons (5 & 6) unit 5**

1. **By using the standard algorithm, find the product.**

   a.
   ```
     1. 7 4
   ×    3. 5
   ```

   b.
   ```
     5 3. 2 8
   ×      7. 9
   ```

   c.
   ```
     2. 0 3
   ×    0. 7
   ```

2. **Compare the products by putting (< , > or =).**

   a. 0.75×0.2 ◯ 7.5×0.2

   b. 4.2×153.2 ◯ 4.2×15.32

   c. 13.9×0.4 ◯ 1.39×4

   d. 0.234×5 ◯ 23.4×0.5

   e. 1.01×0.1 ◯ 10.1×0.1

3. **Complete.**

   a. $30 + 3,000 + 0.3 =$ _____

   b. 21 Hundredths + 5.4 = _____

   c. $75.214 \times 100 =$ _____

   d. If $25 \times 5 = 125$, then $126 \div 5 = 25$ R _____

   e. 6 Hundredths — 6 Thousandths — _____ Thousandths.

4. **Choose the correct answer.**

   a. $3.21 \times 0.9 \approx$ _____ (to the nearest Tenths)

   A. 2.889   B. 2.8   C. 2.9   D. 2.89

   b. The decimal point in the product of 0.01×0.1 is after _____ decimal places.

   A. 1   B. 2   C. 3   D. 4

   c. $0.2 \times 1.12 =$ _____

   A. 224   B. 22.4   C. 2.24   D. 0.224

   d. If $35 \times 47 = 1,645$, then $3.5 \times 0.47 =$ _____

   A. 164.5   B. 16.45   C. 1.645   D. 1,645

   e. 5 Thousandths $\times 4 =$ _____

   A. 0.02   B. 0.2   C. 2   D. 20

5. **By using the opposite area model find :**

   $m + n =$ _____

	2	0.7
m	6	2.1
0.4	0.8	n

Cumulative Assessment **22** **Till lessons (7 & 8) unit 5**

1. Complete.

   a. $145 \text{ cm} = 145 \times$ _____ = _____ m.

   b. $15.6 \text{ kg} + 1,800 \text{ g} =$ _____ kg.

   c. The place value of the digit 9 in the number 35.29 is _____

   d. $3.003 =$ _____ (word form)

   e. $7.777 \times 100 =$ _____

   f. If $18 \times 69 = 1,242$, then $1.8 \times 0.69 =$ _____

2. Choose the correct answer.

   a. $17.93 \text{ kg} =$ _____ g.

      A. 179.3   B. 1.793   C. 17,930   D. 179,300

   b. $3,465 \text{ mL} =$ _____ L

      A. 3.465   B. 34.65   C. 346.5   D. 3,465

   c. $900 + 90 + 9 + 0.9 =$ _____

      A. 9.999   B. 99.99   C. 999.9   D. 9,999

   d. 5 tenths – 35 hundredths = _____ hundredths.

      A. 5   B. 35   C. 30   D. 15

   e. $4,224 \div 12 =$ _____

      A. 235   B. 352   C. 532   D. 32

   f. $0.01 \times 0.1 =$ _____

      A. $\dfrac{1}{10}$ B. $\dfrac{1}{100}$ C. $\dfrac{1}{1,000}$ D. 1

3. Find G.C.F and L.C.M of 24 and 9

   _____

   _____

   _____

4. Order each of the following from least to greatest.

   a. 0.65 km, 590 m, 0.8 km, 705 m

   _____

   b. 325.7 mL, 0.59 L, 806 mL, 0.55 L

   _____

1. Choose the correct answer.

a. $1.3 - 0.85 =$ _____

   A. 0.54   B. 1.55   C. 0.45   D. 1.88

b. $3,330 \div 32 = 104$ R _____

   A. 2   B. 3   C. 4   D. 5

c. If $x - 2.456 = 1.987$, then $x =$

   A. 4.334   B. 4.453   C. 4.444   D. 4.443

d. $[80 \times 10] + [80 \times 5] + [3 \times 10] + [3 \times 5] =$ _____

   A. 85×13 B. 83×15 C. 83×51 D. 38×51

e. 7.345 kg = _____ g.

   A. 7,345   B. 73.45   C. 734.5   D. 0.7345

2. Complete.

a. $36.365 \approx 36.4$ (to the nearest _____).

b. If the price of 15 books is 315 pounds , then the price of each book equals _____ pounds.

c. The G.C.F of 6 and 15 is _____

d. $36 \times$ _____ $= 36,000$

e. $3,333$ mL = _____ L

3. Ali bought 15 books if the price of one book is 4.25 L.E.
Find the price of all books.

_____

_____

4. Mona made a liter of sugar can juice. She drank 570 milliliters. Her mother drank 0.33 Liters. How much sugar can juice is remaining ?

_____

_____

5. If the weight of Hany , Wael and Heba are 85.7 kg , 94,560 g and 75.6 kg
What is the total of their weights ?

_____

_____

27

Cumulative Assessment **24** **Till lessons (10 & 11) unit 5**

1. Find the quotient of each of the following.

a. $5.8 \div 100 = $ _____

b. $0.7 \div 0.001 = $ _____

c. $12.7 \div 0.01 = $ _____

d. $0.7 \div 10 = $ _____

e. $25.36 \div 0.1 = $ _____

f. $74 \div 1,000 = $ _____

2. Solve the following problems.

a. $510.05 \times 10 = $ _____

b. $47.162 \times 100 = $ _____

c. $523.4 \times 0.01 = $ _____

d. $19 \times 0.001 = $ _____

e. $76 \times 0.1 = $ _____

f. $5.146 \times 1,000 = $ _____

3. Complete.

a. $3,257 \div$ _____ $= 32.57$

b. _____ $\div 0.01 = 327$

c. $34.49 \div$ _____ $= 3.449$

d. _____ $\div 10 = 2.51$

e. _____ $\div 100 = 14.652$

f. $6.247 \div$ _____ $= 624.7$

g. $0.39 \times$ _____ $= 0.039$

h. $0.75 \div$ _____ $= 750$

i. $384.2 \div$ _____ $= 3.842$

j. $15.8 \times$ _____ $= 15,800$

4. Compare. Put ($<$, $>$ or $=$).

a. $25,300$ cm ⃝ 2.53 m

b. 756.421×100 ⃝ $756.421 \div 100$

c. The value of 3 in 5.134 ⃝ the value of 3 in 5.314

d. $58.3 \div 0.001$ ⃝ 583×1000

e. The smallest prime number. ⃝ The smallest prime odd number.

f. 637 Hundredths. ⃝ 637×0.01

5. The price of one toy is 15.5 L.E. , find the price of 100 toys.

_____

6. Giovanni walked 7.25 km in 10 days equally. What is the covered distance in meters did he walk in each day ?

_____

_____

28

Cumulative Assessment· 25 Till lessons (12 & 13) unit 5

1. Complete.

a. $2.16 \div 7.2 =$ _____ $\div$ _____ $=$ _____

b. $88.9 \div 3.5 =$ _____ $\div$ _____ $=$ _____

c. _____ $\div 0.1 = 0.84$

d. $2 \div 0.3 \approx$ _____ (to the nearest Hundredths)

e. $4.25 \div 8.5 =$ _____

f. 39 days $\approx$ _____ weeks.

2. Find the quotient of each of the following.

a. $2.67 \div 1.2$

b. $4.384 \div 0.32$

c. $8 \div 7$ (to the nearest Tenths)

d. $7.4 \div 5.1$ (to the nearest Hundredths)

3. Choose the correct answer.

a. $80 \div 0.08 =$ _____

    A. 10   B. 100   C. 1,000   D. 8,000

b. $30.24 \div 3.6 =$ _____

    A. $3.024 \div 36$ B. $302.4 \div 36$ C. $302.4 \div 3.6$ D. $3,024 \div 36$

c. The value of 4 in the number 72.014 is _____

    A. 4   B. 0.4   C. 0.04   D. 0.004

d. The prime factorization of 6 is _____

    A. 1×6 B. 2×3 C. $5 + 1$ D. $1, 6$

e. $3,200$ mL $=$ _____ L

    A. 320   B. 32   C. 3.2   D. 0.32

f. If $3,012 \div 12 = 251$, then $251 \times 12 =$ _____

    A. 3,013   B. 3,012   C. 3,014   D. 3,015

4. Omnia has two strips of cloth One is 25 centimeters wide , and the other is 45 cm. wide. She wants to cut both pieces into strips of equal width that are as wide as possible. How wide should she cut the strips ? Do you have to find the G.C.F or the L.C.M ? **What is the answer?**

5. Ahmed has 300 pounds to spend on new clothes. if he bought 12 pair of socks for 18 pounds a pair. How much money will he have left to spend ?

29

Cumulative Assessments on UNIT 6

1. Use the order of operations to evalute each expression of the following.

a. $34 \times 28 \div 2 + 5 =$ _____

b. $1,403.5 - 12.3 \div 0.01 + 9.8 =$ _____

c. $12 + 24 \div 4 + 8 =$ _____

d. $3.52 \times 2.2 \div 0.01 + 6.9 =$ _____

2. Compare. Write (< , > or =).

a. 0.01×0.1 ⃝ $1 \div 1,000$

b. $3.41 + 2.59$ ⃝ $3.41 - 2.59$

c. $(38.2 + 32) \times 0.01 + 15$ ⃝ $38.2 + 32 \times 0.01 + 15$

d. The smallest prime number. ⃝ The common factor for all numbers.

e. $3,475.1 \times 0.01$ ⃝ $34.751 \div 0.01$

f. 33.33 ⃝ 3.333

3. Choose the correct answer.

a. The first operation to solve $983 - 16 \div 8 + 11 \times 10$ is _____

    A. Add.   B. Subtract.   C. Multiply.   D. divide.

b. $1,356$ mL = _____ L.

    A. 1.356   B. 13.56   C. 135.6   D. 1356

c. $15.6 + 3.125 \approx$ _____ [to the nearest tenths]

    A. 18.7   B. 18.8   C. 18.725   D. 18.73

d. $12 =$ _____

    A. $54 \div (3 + 6 \times 2)$ B. $(54 \div 3) + (6 \times 2)$ C. $54 \div (3 + 6) \times 2$ D. $54 \div ((3 + 6) \times 2)$

e. $0.2 \times 0.4 =$ _____

    A. 8   B. 0.8   C. 0.08   D. 0.008

f. The value of 5 in the number 3.256 is _____

    A. $\dfrac{5}{10}$ B. $\dfrac{5}{100}$ C. $\dfrac{5}{1,000}$ D. 0.5

4. If the price of each pen is 3.25 L.E. , find the price of 14 pens.

_____

30

Cumulative Assessment **27** **Till lesson 3 unit 6**

1. Complete.

a. 376 Thousandths + 524 Thousandths = _____ Tenths.

b. The number whose prime factors are 2 , 2 , 3 and 5 is _____

c. 37 × _____ = 3,700

d. Quotient × divisor + remainder = _____

e. _____ × 0.01 = 6.751

f. (13.5 − 5.13) ÷ 0.1 + 16.3 = _____

2. Choose the correct answer.

a. 700 g = _____ kg.

    A. 7   B. 0.007   C. 0.07   D. 0.7

b. 0.3 × 0.5 = _____

    A. 0.35   B. 0.15   C. 1.5   D. 15

c. If the area model of a problem is

	2	0.3
×		0.9
0.8	1.6	y

, then $x + y = $ _____

    A. 6,240   B. 7.4   C. 6.24   D. 624

d. 0.007 × 1,000 ☐ 70,000 × 0.001

    A. <   B. >   C. =

e. 7 Tenths − 63 Hundredths = _____ Hundredths.

    A. 70   B. 7   C. 700   D. 7,000

3. Write the expression that matches the clues then, evalute the expression.

a. Add 3.4 and 3.1 then multiply the result by 10 _____

b. Subtract 3.1 from 7.54 then divide by 4 _____

c. Divide 93 by 0.3 and then add 211.7 _____

d. Multiply 3.5 by 100 Next , subtract 54.5. then , add 13.4. last , divide the result by 0.01.

_____

4. Find the result.

a. 321.41 + 36.791 = _____

b. 214.7 − 99.543 = _____

c. 321 × 13 = _____

d. 62.5 ÷ 2.5 = _____

e. 20 + 33.29 × 10 − 6.1 × 10 = _____

f. 88 ÷ 11 − 7 + 4 = _____

31

Cumulative Assessment **28** Till lesson 4 unit 6

1. Write the rule for each pattern with a variable, then complete the pattern by finding the missing values .

   a. 48 , 24 , 12 , _____ , _____   Rule : _____

   b. 15 , 18 , _____ , 24 , 27 , _____   Rule : _____

   c. 28 , 24 , 20 , _____ , _____   Rule : _____

   d. _____ , 8 , 15 , _____ , 29   Rule : _____

2. Complete.

   a. In the pattern : 1 , 2 , 4 , 8 , 16 , _____ the rule is _____

   b. $461.12 \div 10 =$ _____

   c. $513.2 \div 0.01 =$ _____

   d. $12.34 \times 0.5 \approx$ _____ (to the nearest tenths)

3. a. Poula runs 12 hours every week. What is the number of running hours in 52 weeks ?

   b. Petra walked from home to her school a distance 1.23 km , then she walked from her school to her grandmother home a distance 1.737 km.
   What is the total distance did Petra cover ?

4. If the sum of two numbers is 50.1 and the smallest number of them is 5.999 What is the greatest one ?

5. Find G.C.F and L.C.M of the two numbers 12 and 18.

Monthly Tests

Month	Lessons
October	From lesson (1) – Unit (1) to the end of lesson (8) – Unit (2)
November	From lesson (1) – Unit (3) to the end of lesson (6) – Unit (5)

Total mark

15

(5 marks)

1. **Choose the correct answer.**

   a. Which number of the following has 3 hundredths , 7 ones , 2 thousandths ?

   A. 0.732   B. 3.72   C. 7.032   D. 3.702

   b. The L.C.M of 5 and 6 is ———

   A. 20   B. 24   C. 30   D. 40

   c. $174.602 = 174 +$ ———

   A. 6.02   B. 0.602   C. 602   D. 60.2

   d. 7 Tenths — 7 Thousandths = ———

   A. 0.693   B. 0.63   C. 6.3   D. zero

   e. All the following are equal except ———

   A. 0.300   B. 0.3   C. 0.003   D. 0.30

2. **Complete.**   (5 marks)

   a. If $x + 52.89 = 62.90$, then $x =$ ———

   b. The smallest odd prime number is ———

   c. $2.416 \times 10 =$ ———

   d. The value of the digit 5 in the number 31.25 is

   e. $21.729 \approx$ ——— (to the nearest Tenth)

3. a. **Find the result of each of the following.**   (2 marks)

   1. $17.3 + 4.6$ 2. $12.74 - 0.359$

   b. Mazen had 35 L.E. He bought a ball for 9.75 L.E. and a book for 8.4 L.E.
   How much money was left with Mazen ?   (3 marks)

34

October Test 2

1. Choose the correct answer. (5 merks)

a. $72.43 \div 10 =$ _____

   A. 7.243   **B.** 72.34   **C.** 7,243   **D.** 724.3

b. The common factor of all numbers is _____

   A. 0   **B.** 1   **C.** 2   **D.** 3

c. Which of the following is an expression ?

   A. $2.36 + X = 14.78$ **B.** Sara saved 20 L.E per day

   C. $13.15 + 2.8 - X$ **D.** $1.75 + 1.25 = 2.1 + 0.9$

d. $39.999 \approx$ _____ [to the nearest Hundredth]

   A. 39   **B.** 40   **C.** 39.9   **D.** 39.99

e. $1.7 + 0.2$ ☐ $1.33 + 0.51$

   A. <   **B.** =   **C.** >

2. Complete. (5 marks)

a. $70.106 = 70 + 0.1 +$ _____

b. 5 Hundredths – 24 Thousandths = _____ Thousandths.

c. $458.2 \div 100 =$ _____

d. In 734.28 , the digit 2 is in the _____ place. Its value is _____

e. The number whose all prime factors are 2, 3 and 5 is _____

3. a. The weight of Noha is 35.275 kg and the weight of Hala is 42.012 kg (2 marks)

   What is the r weight together ?

b. Find the G.C.F and L.C.M for 12 and 10 (3 marks)

35

Total mark

15

1. Choose the correct answer. (5 marks)

a. The L.C.M of 3 and 7 is —————

   A. 1   B. 21   C. 37   D. 73

b. The smallest prime number is —————

   A. 0   B. 1   C. 3   D. 2

c. $724.3 \div 100 = $ —————

   A. 7.243   B. 72.34   C. 7,243   D. 724.3

d. Which of the following is not an expression ?

   A. $x + 0.8 - 1.6$ B. $3.25 + x + 5.55$ C. $3.6 - x = 1.54$ D. $2.36 + 1.5 - x$

e. 5.65 ☐ 56.5

   A. >   B. =   C. <

2. Complete. (5 marks)

a. $3.9 + 1.26 = $

b. $17.5 - 8.36 = $

c. $21.316 \approx $ ————— (to the nearest Hundredths)

d. The place value of the digit 3 in the number 15.263 is

e. The first four multiples of 5 are ————— , ————— , ————— and —————

3. a. Write the greatest decimal less than one which consists of 6 , 4 , 3 and 5 , then round it to the nearest Tenths and Thousandths. (3 marks)

————————————————————————————————

————————————————————————————————

————————————————————————————————

b. Solve the following equations. (2 marks)

   1. $8.2 + p = 10.4$ 2. $k - 6.82 = 3.11$

November · Test · 1

1. Choose the correct answer. (5 marks)

a. Since $9 \times 4 = 36$, then $0.09 \times 0.4 =$ _____

A. 36   B. 3.6   C. 0.36   D. 0.036

b. $2,215 \div 15 = 147$ R _____

A. 15   B. 10   C. 5   D. 0

c. $5,508 =$ _____

A. 54×342 B. 36×153 C. 61×281 D. 32×372

d. $2 \times$ _____ $= 2,000$

A. 10   B. 100   C. 1,000   D. 10,000

e. 876×72 is near close to

A. 56,000   B. 5,600   C. 63,000   D. 72,000

2. Complete. (5 marks)

a. $14.14 \times 0.1 =$ _____

b. $34 \times$ _____ $= 3,400$

c. $15 \times 46 = [10 \times$ _____ $] + [10 \times 6] + [5 \times 40] + [$ _____ $\times 6]$

d. $2,731 \div 1 =$ _____

e. $2.41 \times 0.2 \approx$ _____ (to the nearest Tenths)

3. a. Ahmad saved 125 pounds , Manal saved 12 times as Ahmad , Bassem saved 15 times as Ahmad. How much money they saved ? (2 marks)

b. Divide using any method you prefer. (3 marks)

1. $65 \overline{)543}$ 2. $1,919 \div 19$

37

November Test 2

1. Choose the correct answer. (5 marks)

a. 3×5 Hundredths = _____

   A. 1.5   B. 0.15   C. 15   D. 0.015

b. If $7,785 \div 31 = 251 R 4$, then $31 \times 251 =$ _____

   A. 7,784   B. 7,782   C. 7,781   D. 7,783

c. $85 \times 69 = [80 \times 60] + [80 \times 9] + [5 \times 9] + [$ _____ $]$

   A. 5×6 B. 5×60 C. 80×6 D. 50×60

d. $320 \times 15 =$ _____ Hundreds.

   A. 4,800   B. 480   C. 48   D. 4.8

e. 0.15×39.8 ⬜ 1.5×0.398

   A. >   B. <   C. =

2. Complete. (5 marks)

a. If $326 \times 7 = 2,282$, then $0.326 \times 7 =$ _____

b. $15 \times$ _____ $= 15,000$

c. $2,002 \div 22 =$ _____

d. If $735 \div 21 = 35$, then $35 \times 21 =$ _____

e. In the equation $7,785 \div 31 = 251 R 4$, the dividend is _____

3. a. If 18 plums are divided equally into 3 bags, then how many plums will be in each bag?

(2 marks)

_____

_____

b. Find.

(3 marks)

1. $1,536 \div 16$ 2. 2.1×0.67 3. 18×107

_____

_____

_____

38

November Test 3

1. **Choose the correct answer.** (5 marks)

   a. The decimal point in the product of 3.9×4.23 is after ———— place(s).

      A. 1   B. 2   C. 3   D. 4

   b. In the equation $36 \div 4 = 9$, the quotient is ————

      A. 36   B. 4   C. 9   D. zero

   c. What is the ones digit in the product of 36×123 ?

      A. 8   B. 6   C. 3   D. 2

   d. Quotient × divisor + remainder = ————

      A. divisor   B. quotient   C. remainder   D. dividend

   e. $0.002 \times 1,000$ ☐ $20,000 \times 0.001$

      A. >   B. <   C. =

2. **Complete.** (5 marks)

   a. $0 \div 31.564 = $ ————

   b. $1,515 \div 15 = $ ————

   c. $253 \times $ ———— $= [70 + 200] + [70 \times 50] + [70 \times 3] + [4 \times 200] + [4 \times 50] + [4 \times 3]$

   d. $360 \times 0.1 = $ ————

   e. $4.321 \times $ ———— $= 432.1$

3. a. A baker made 135 serving of baklava for a party. If each baking tray holds 11 servings of baklava, how many trays will be needed to hold all the baklava ? (2 marks)

   ————————————————————

   ————————————————————

   b. Solve each of the following problems using any method you prefer. (3 marks)

   1. 32×71 2. 201×32

   ————————————————————

   ————————————————————

39
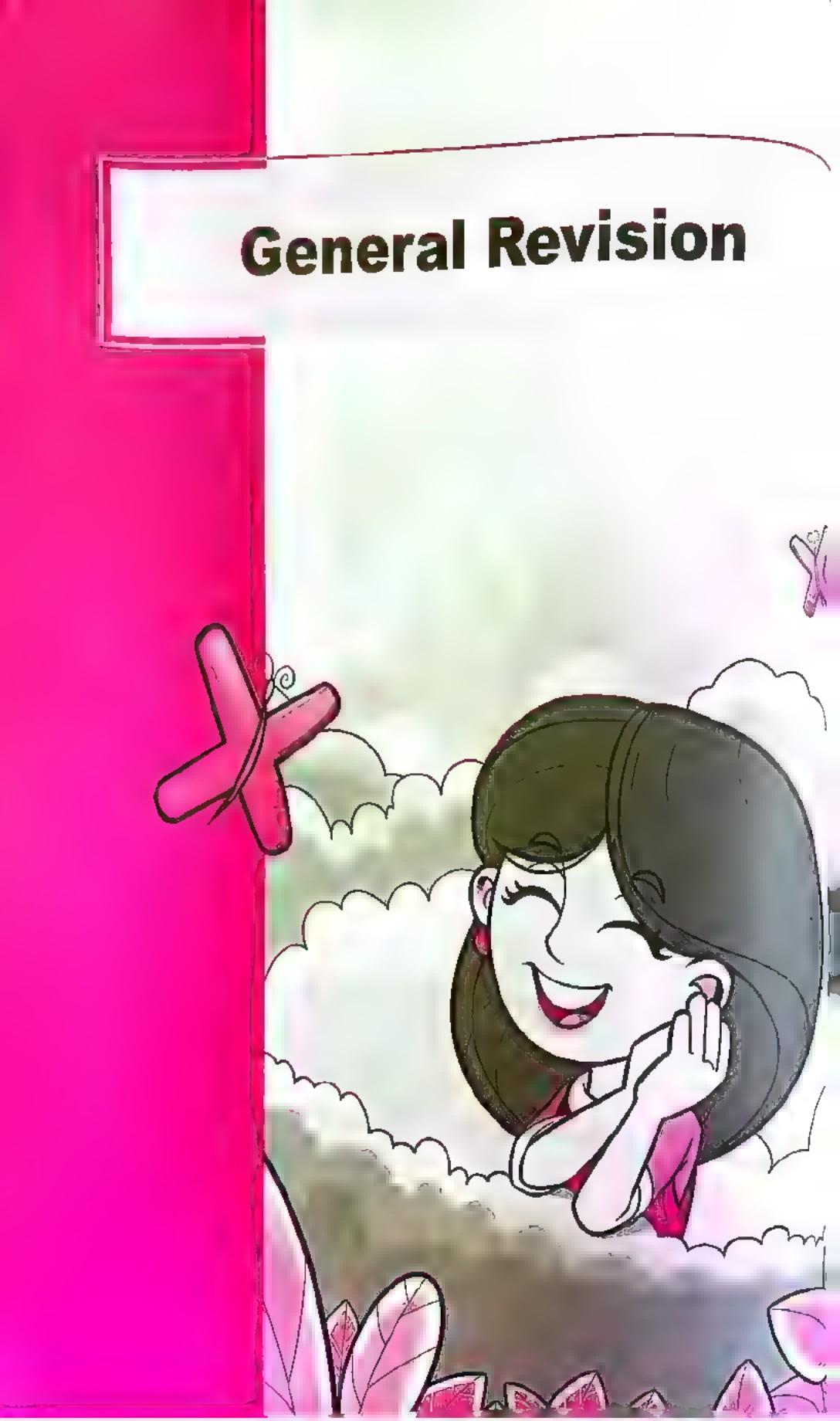
General Revision

1. Complete.

1. In the number 452.09, the digit 9 is in the ———— place. [Port Said 23]

2. 5 Thousandths + 73 Hundredths = ———— Thousandths [El Beheira 23]

3. $9.47 \times 1,000 =$ ———— [El Beheira 23]

4. $6 + 0.4 + 0.05 =$ ———— [Alexandria - West 23]

5. $7.368 \div$ ———— $= 73.68$ [Giza - Awseem 23]

6. $12.345 \approx$ ———— [to the nearest Tenths] [EL Beheira - Housh Essa 23]

7. $1.72 + 2.41 =$ ———— [Giza - Abo El Nomrous 23]

8. 3 + 3 Tenths + 3 Hundredths = ———— [Giza - Awseem 23]

9. $8.659 - 4.32 =$ ———— [Cairo - El Marg 23]

10. $3,786 \div$ ———— $= 3.786$

11. $78.65 \times 10 =$ ———— [Aswan 23]

12. $40 + 8 + 0.5 + 0.06 =$ ———— [Souhag 23]

13. The value of the digit 6 in the number 36.059 is ———— [Cairo - Heliopolis 23]

14. 3 Hundredths + 35 Thousandths = ———— Thousandths [El Beheira 23]

15. $1,000 \times$ ———— $= 60,000$ [El Monofia - Tala 23]

16. $6.72 + 1.24 =$ ———— [El Menia 23]

17. $5.238 + 3.65 =$ ———— [Cairo 23]

18. $0.0257 \approx$ ———— [to the nearest Thousandths] [Giza 23]

2. Choose the correct answer.

1. 5 Tenths – 35 Hundredths = ———— Hundredths. [Giza 23]

   A. 15   B. 35   C. 30   D. 5

2. $61.3 - 24.7 =$ ———— [Cairo - El Zaiton 23]

   A. 67.5   B. 34.4   C. 807   D. 36.6

3. $4.8 + 0.8 =$ ———— [El Monofia 23]

   A. 4.88   B. 4.6   C. 5.6   D. 4.16

4. $15.55 \approx$ ———— [to the nearest whole number] [El Beheira 23]

   A. 15.5   B. 15.6   C. 16   D. 15.70

[Cairo 23]

5. 30 + 0.04 + 0.005 = ———

   A. 30.045   B. 30.45   C. 30.405   D. 30 504

[Port Said 23]

6. 0.94 × 100 = ———

   A. 94   B. 9.4   C. 940   D. 0.094

[Aswan - Kom Ombo 23]

7. 9 × ——— = 900

   A. 0.01   B. 10   C. 1,000   D. 100

[Cairo - Holiopolis 23]

8. 65.2 ÷ 10 = ———

   A. 0.652   B. 65.2   C. 6.52   D. 652

[El Menia 23]

9. 20 + 0.9 + 0.004 = ———

   A. 20 094   B. 20.94   C. 2.904   D. 20.904

[Aswan 23]

10. 5 + 10 + 0.6 + 0.07 + 0.009 = ———

   A. 976.15   B. 15.679   C. 15.976   D. 51.679

[Cairo 23]

11. 2.13 × ——— = 2,130

   A. 10   B. 100   C. 1,000   D. 10,000

[Giza - El Agouza 23]

12. 100 × ——— = 7.7

   A. 0.77   B. 77   C. 770   D. 0.077

[Alexandria - West 23]

13. ——— × 5 = 5,000

   A. 100   B. 1,000   C. 10,000   D. 100,000

[El Beheira 23]

14. 23.4 ÷ ——— = 2.34

   A. 10   B. 100   C. 1,000   D. 10,000

[Ismailia 23]

15. 50 + 3 + 0.08 = ———

   A. 53.8   B. 35.08   C. 53.80   D. 53.08

[Cairo - El Sherouk 23]

16. The value of the digit 5 in the number 3.514 is

   A. 50,000   B. 500   C. 0.5   D. 0.005

[Cairo - El Salam 23]

17. Sixty-four and sixty-four thousandths = ———

   A. 46.064   B. 64.064   C. 64.64   D. 46.46

[El Beheira 23]

18. The place value of the digit 5 in the number 4.65 is ———

   A. Hundredths   B. Tenths   C. Thousandths   D. Hundreds

[Cairo 23]

19. $\frac{469}{1,000}$ = ———

   A. 4.96   B. 0.469   C. 459   D. 4.69

20. 25.17 ◯ 25.099

   A. >   B. <   C. =

---

3. **Answer each of the following.**

1. Decompose the number 40.302 using the expanded form.   [Giza - El Agouza 23]

2. Decompose the number 80.507 using the expanded form.   [El Menia 23]

3. Ola saved 17.25 pounds, and her brother saved 8.5 pounds. Find the sum they saved.

   [Alexandria - West 23]

4. Ahmed catches a fish its length is 22.5 cm and Assem catches a fish its length is 13.2 cm. Find the difference between the lengths of the two fish.   [Giza - Abo El Nomrous 23]

5. Two gold bars, if the weight of the first is 3.39 kg and the weight of the second is 6.08 kg., calculate the weight of the two gold bars.   [Aswan 23]

6. Order from least to greatest. 0.096 , 2.56 , 1.26 , 0.27

7. Order from greatest to smallest. 80.21 , 8.102 , 80.012 , 8.012 , 80.09

43

1. Complete.

1. The variable in the equation $x + 5 = 9$ is ———— [Cairo – El Marg 23]

2. If $y + 1.2 = 7.5$, then $y =$ ———— [Ismailia 23]

3. If $a - 1.241 = 0.213$, then $a =$ [Aswan – Kom Ombo 23]

4. If $9.6 - x = 2.45$, then $x =$ ———— [Cairo – Heliopolis 23]

5. In the bar model

30.8	
a	19.5

, the value of $a =$ ———— [Alexandria – West 23]

6. The number 11 has ———— factors.

7. The number whose all prime factors are 2, 3 and 5 is —— [Giza 23]

8. The prime number has ———— factors.

9. ———— is a factor of all numbers. [Port Said 23]

10. The number whose prime factors are 2, 2, 3 and 5 is —— [El Beheira 23]

11. The prime factors of 14 are ————

12. ———— and ———— are prime factors of 6 [Aswan 23]

13. ———— is the only even prime number. [El Monofia 23]

14. G.C.F of 6 and 12 is ———— [Ismailia 23]

15. The G.C.F of 2 and 3 is ———— [Port Said 23]

16. G.C.F of 7 and 21 is [Ismailia 23]

17. The L.C.M of 5 and 10 is ———— [Cairo – Heliopolis 23]

18. ———— is a multiple of all numbers.

19. L.C.M of 6 and 10 is ————

20. The smallest prime odd number is ————

21. The equation which represents the model is ————

6.5	
p	3.2

[El Kalyoubia 23]

2. Choose the correct answer.

1. Which of the following represents an equation ?

   A. $3.6 + 2.1$ B. $a + 3.1 = 5$ C. $y + 2.1$ D. $7.1 - x$

2. Which of the following represents an expression ?

   A. $3.1 + x = 7$ B. $2 + 5 = 7$ C. $3.6 - y = 1.4$ D. $m + 31$

3. If $k - 0.6 = 0.4$, then $k =$ ———— [Alexandria 23]

   A. 1 B. 0.2 C. 2 D. 0.4

44

4. The value of the variable x in the equation $x - 2.3 - 3.3$ is ———— [Cairo 23]

 A. 1.5   B. 6.5   C. 5.6   D. 5.1

5. The prime factorization of 24 is ————

 A. 6×4 B. 8×3 C. $3 \times 2 \times 2$ D. $2 \times 2 \times 2 \times 3$

6. The prime number where the sum of its factors is 8 is ———— [El Kalyoubia 23]

 A. 2   B. 3   C. 5   D. 7

7. The number which has prime factors 2 , 2 , 3 , 5 is ———— [El Monofia 23]

 A. 30   B. 40   C. 50   D. 60

8. The prime factors of 12 are ———— [Cairo 23]

 A. 2 and 3   B. 1 , 2 and 3   C. 2 , 3 and 5   D. 2 , 3 and 4

9. In $56.4 + x = 96$, the variable is ———— [Cairo - Nasr City 23]

 A. 56.4   B. x   C. 96   D. 6.5

10. The number 7 has ———— factors. [Cairo - El Nozha 23]

 A. 1   B. 2   C. 3   D. 4

11. The only even prime number is ———— (Souhag 23)

 A. 0   B. 2   C. 4   D. 6

12. The next prime number after 7 is ———— [Giza 23]

 A. 15   B. 13   C. 11   D. 10

13. All the following are prime numbers except ———— (Ismailia 23)

 A. 1   B. 2   C. 3   D. 5

14. The number ———— is a common factor for all numbers. [Giza 23]

 A. 0   B. 1   C. 2   D. 3

15. ———— is a common multiple of 9 and 6 [Cairo 23]

 A. 12   B. 18   C. 24   D. 27

16. The greatest common factor (G.C.F) of 10 and 12 = ———— [Cairo - El Sa.am 23]

 A. 10   B. 12   C. 60   D. 2

17. The G.C.F of the two numbers 4 and 8 is ———— (Aswan 23)

 A. 4   B. 32   C. 8   D. 16

18. The number ———— is of multiples of the digit 4 [Cairo - El Marg 23]

 A. 26   B. 27   C. 28   D. 29

45

19. The L.C.M of 6 and 10 is ———

    A. 60   **B.** 30   **C.** 15   **D.** 45

20. L.C.M of 10 and 15 is ———

    A. 30   **B.** 15   **C.** 5   **D.** 10

3. Answer each of the following.

1. Find the greatest common factor (G.C.F) of 42 and 28

2. Find (LC.M) for the two numbers (8 and 12)

3. Find the L.C.M and G.C.F for the two numbers 6 and 10

4. Solve each of the following equations using inverse operation strategy.

    a. $x + 3.40 = 7.04$ b. $y - 2.34 = 3.66$

5. Solve the following equations (create a bar model to solve each problem).

    a. $x - 3.4 = 1.34$ b. $8.76 = 3.53 + y$

6. Answer the following.

    a. List the first five multiples of 8

    b. List the first six multiples of 4

    c. What are the common multiples of 8 and 4 ?

7. Mona waters one of her plants every 4 days and another plant every 6 days. If she waters both plants today.

    When is the next time both plants will be watered on the same day ?

1. Complete.

1. $9 \times 27 = (9 \times \underline{\qquad}) + (9 \times 7)$ [Alexandria - West 23]

2. $234 \times 57 = (200 \times 50) + (200 \times 7) + (30 \times 50) + (30 \times \underline{\qquad}) + (4 \times 50) + (4 \times 7)$ [Cairo 23]

3. $4,231 \times 3 = \underline{\qquad}$ [Giza - Awseem 23]

4. $21 \times 64 = \underline{\qquad}$ [Aswan - Kom Ombo 23]

5. $(6 \times 87) + (2 \times 87) = \underline{\qquad} \times 87$ [Giza - El Agouza 23]

6. The product of 899×11 is closer to the product of $\underline{\qquad} \times \underline{\qquad}$ [Souhag 23]

7. If $4 \times m = 16$, then the value of m = $\underline{\qquad}$ [Port Said 23]

8. $43 \times 26 = (3 \times 6) + (3 \times 20) + (40 \times 6) + (40 \times \underline{\qquad})$ [Cairo 23]

9. $7 \times 74 = (7 \times 4) + (7 \times \underline{\qquad})$

10. $\underline{\qquad} \times 9 = 900,000$ [Souhag 23]

11. $70,000 = 7 \times \underline{\qquad}$

12. $253 \times \underline{\qquad} = (70 \times 200) + (70 \times 50) + (70 \times 3) + (4 \times 200) + (4 \times 50) + (4 \times 3)$

13. $120 \times 40 = \underline{\qquad}$

14. $2,134 \times 5 = \underline{\qquad}$

15. The ones digit of the product of $3,594 \times 93$ will be $\underline{\qquad}$

16. The product of 799×12 is closer to the product of $\underline{\qquad} \times \underline{\qquad}$

17. $(3 \times 5) + (40 \times 5) + (3 \times 90) + (40 \times 90) = \underline{\qquad} \times 95$

18.

	40	7
10		
3		

19. $1,000 \times \underline{\qquad} = 150,000$

2. Choose the correct answer.

1. $(4 \times 85) + (2 \times 85) = \underline{\qquad} \times 85$ [Giza - Awseem 23]

   A. 24   B. 42   C. 8   D. 6

2. If $5 \times V = 45$, then V = $\underline{\qquad}$ [Aswan 23]

   A. 5   B. 9   C. 30   D. 1

47

3. $53 \times$ _____ $= (53 \times 4) + (53 \times 6)$

   A. 4   B. 6   C. 8   D. 10

4. $(6 \times 85) + (2 \times 85) =$ _____ $\times 85$

   A. 24   B. 42   C. 8   D. 6

5. $16 \times 15 \bigcirc 20 \times 13$

   A. >   B. =   C. <

6. $243 \times 14 \bigcirc 324 \times 14$

   A. <   B. =   C. >

7. $220 \times 15 =$

   A. 33   B. 33 tens   C. 33 hundreds   D. 33 thousands

8. What is the ones digit in the product of 34×123?

   A. 2   B. 3   C. 6   D. 8

9. The product of 237×25 is closer to _____

   A. 5,000   B. 6,000   C. 7,000   D. 8,000

10. The missing number in the product is _____

$$\begin{array}{r} 5\ 1\ 4 \\ \times \quad 1\ 3 \\ \hline \\ +\ 5,\ 1\ 4\ 0 \\ \hline 6,\ 6\ 8\ 2 \end{array}$$

   A. 2,451   B. 1,524

   C. 1,452   D. 1,542

11. $(40 \times 32) + (2 \times 32) =$ _____ $\times 32$

   A. 24   B. 42   C. 8   D. 6

12. What is the unknown value in the area model of 35×475?

	400	70	5
30	?	2,100	150
5	2,000	350	25

   A. 430   B. 1,200

   C. 12,000   D. 120

13. A merchant bought 125 boxes of juice for 15 pounds each. How much money did he pay?

   A. 1,785   B. 1,875   C. 1,800   D. 1,870

14. $25 \times 32 =$ _____ Hundreds.

   A. 8   B. 80   C. 800   D. 8,000

15. 5 hundreds $\times$ 3 hundreds = _____ hundreds.

   A. 15   B. 53   C. 1,500   D. 8

16. A pair of shoes costs 500 L.E., which is 5 times as much as a shirt costs, then the shirt cost = _____ L.E.

   A. 500   B. 400   C. 300   D. 100

17. —————— × 1,000 = 270,000

   A. 72   B. 27   C. 270   D. 720

18. 110 × 40 = ——————

   A. 44   B. 440   C. 4,400   D. 44,000

19. 27 × 134 = ——————

   A. 3,618   B. 3,681   C. 3,816   D. 3,861

20. Mona bought 31 boxes of juice for 25 L.E. each. She paid = —————— L.E.

   A. 757   B. 775   C. 577   D. 7,750

3. Answer each of the following.

  1. Find the missing number.   (Giza - Awseem 23)

    a. $n \times 123 = 0$ $n =$ ——————

    b. $5 \times m = 35$ $m =$ ——

  2. Find.

    a. 865×43 b. 35×24

  3. Marwa saved 125 pounds , Ahmed saved 11 times as Marwa , Mariam saved 9 times as Marwa. How much money they saved?

  4. Ashraf runs 14 hours every week.

    What is the number of running hours in 25 weeks?

  5. Use the distributive property of multiplication and area model to find the product of 47×35.

  6. Yousef bought 100 pens of the same type. The price of each pen is 17 pounds. How much money Yousef paid?

1. Complete.

1. If $325 \div 25 = 13$, then 25 is called ———— [Cairo 23]

2. $1,227 \div 12 =$ ———— R [Cairo - Al Khalifa and Al Mokattam 23]

3. If $300 \div 25 = 12$, then the dividend is ————

4. $0 \div 32 =$ ————

5. $351 \div 13 =$ ————

6. $7,426 \div 1 =$ ————

7. $150 \div 30 =$ ————

8. Quotient × divisor + remainder = ————

9. $64 \div 6 = 10$ R ————

10. The quotient in the opposite area model is ————

	1,825	75
25	-1,750	-75
	75	00

11. If the price of 17 books is 595 pounds, then the price of each book equals ———— pounds.

12. $1,313 \div 13 =$ ————

13. If $13 \times 257 = 3,341$, then $3,344 \div 13 = 257$ R ————

14. $2,761 \div 2,761 =$ ————

15. If $650 \div 25 = 26$, then $26 \times 25 + 5 =$ ————

2. Choose the correct answer.

1. The divisor in the equation $36 \div 9 = 4$ is ———— [Alex. West 23]
   - A. 36
   - B. 4
   - C. 9
   - D. 0

2. $29 \div 4 = 7$ R———— [Cairo - El Marg 23]
   - A. 0
   - B. 1
   - C. 2
   - D. 3

3. $1,515 \div 15 =$ ———— [Ismailia 23]
   - A. 11
   - B. 101
   - C. 1,001
   - D. 15

4. $4,150 \div 29 = 143$ R———— [Giza - Awseem 23]
   - A. 4
   - B. 2
   - C. 1
   - D. 3

5. $328 \div 18 = 18$ R ———— [Cairo 23]
   - A. 2
   - B. 5
   - C. 6
   - D. 4

6. $643 \div$ ———— $= 643$
   - A. 0
   - B. 1
   - C. 10
   - D. 100

7. $3,003 \div 33 =$ ————
   A. 19   B. 91   C. 109   D. 901

8. In the opposite area model , which choice best represents the problem ?
   A. $3,159 \div 13 = 2403$
   B. $3,159 \div 13 = 243$
   C. $3,159 \div 13 - 234$
   D. $3,159 \div 13 = 342$

	200	40	3
13	3,159	559	39
	−2,600	−520	−39
	559	39	00

9. If $4,092 \div 12 = 341$, then $341 \times 12 =$ ————
   A. 4,091   B. 4,092   C. 4,093   D. 4,094

10. $6,293 \div 31 =$ ————
   A. 203 R 1   B. 302   C. 203   D. 302 R 1

11. If $3,321 \div 27 = 123$, then $3,323 \div 27 =$ ————
   A. 123   B. 123 R 1   C. 123 R 2   D. 123 R 3

12. f $51 \times 23 = 1,173$, then $1,180 \div 23 = 51$ R ————
   A. 4   B. 5   C. 6   D. 7

13. If $3,768 \div 24 = 157$, then $24 \times 157 =$ ————
   A. 3,768   B. 3,769   C. 3,770   D. 3,767

14. In the opposite area model of division
    , the value of × is ————
    A. 1   B. 10
    C. 100   D. 1,000

	200	×	7
34	7,378	578	238
	−6,800	−340	−238
	578	238	000

15. What is the value of M in the opposite division problem ?
    A. 324   B. 342   C. 234   D. 432

$$17\overline{)3,978}\ ^{M}$$

3. Answer each of the following.

1. Find the quotient of division $11 \div 7$.   (Cairo 23)

2. If 18 plums are packed each 3 in a bag , then how many bags will be there ?   [Port Said 23]

3. Distribute 3,600 L.E. between 9 persons equally. How much every one take ?
   (Giza El Agouza 23)

4. A teacher wants to distribute 510 prizes to 5 classes equally. How many prizes per each class ?

5. If 165 passengers travels to cairo by private cars, if the number of passengers in each car is 11 passengers , what is the number of cars to transport a.l the passengers ?
   [Kalyoubia 23]

6. A charity wants to distribute 3,125 pounds into 25 persons equally. What's the share of each person ?   [Giza - Abo El Nomrous 23]

7. There are 1,500 animals in one barn. There are 574 goats , 346 cows and the rest are horses. If 80 horses were sold , how many horses are left in that barn ?

51

1. Complete.

1. $123 \times 0.01 =$ ———   [El Beheira 23]

2. The product of $122.5 \times 2.2 =$ [Cairo - El Sherouk 23]

3. $0.2 \times 0.3 =$ ———   [Alex. - West 23]

4. ——— $\times 0.01 = 5.324$ [Giza - Awseem 23]

5. $4.2 \times 5.6 =$ ———   [Giza - Awseem 23]

6. $25 \times 0.1 =$ ———   [Aswan - Kom Ombo 23]

7. $5.4 \times 0.12 =$ ———   [Cairo - Heliopolis 23]

8. 250 mL $=$ ——— L   [Cairo - El Marg 23]

9. 700 g $=$ ——— kg   [Cairo - El Nouzha 23]

10. 39 days $\approx$ ——— weeks [to the nearest week]   [Ismailia 23]

11. $513.2 \div 0.01 =$ ———   [Ismailia 23]

12. $12.7 \div 0.01 =$ ———   [Ismailia 23]

13. 36 cm $=$ ——— m   [El Beheira 23]

14. $89.36 \div 100 = 89.36 \times$ ———   [Giza - Awseem 23]

15. 710 grams $=$ ——— kg   [El Menia 23]

16. The quotient of $6.66 \div 6 =$ ———   [El Beheira 23]

17. $8.8 \div 3.2 =$ ——— $\div$ ——— $=$ ———   [Ismailia 23]

18. $2.1 \div 0.7 =$ ———   [Cairo - E. Nouzha 23]

19. The quotient of $84.24 \div 2 =$ ———   [Cairo - El Marg 23]

20. $2,000$ g $=$ ——— kg   [El Beheira 23]

2. Choose the correct answer.

1. $100 \times 5.2 =$ ———   [Cairo - Heliopolis 23]

   A. 5.20   B. 520   C. 0.52   D. 52

2. $76.5 \times \dfrac{1}{10} =$ ———   [El Menia 23]

   A. 765   B. 7.65   C. 0.765   D. 76.05

3. 3 Hundredths $\times 3 =$ ———   [Ismailia 23]

   A. 9 Hundreds   B. 9 Hundredths   C. 0.90   D. 9

4. $0.3 \times 5 =$ ———— [Aswan 23]

   A. 0.35   B. 1.5   C. 15   D. 150

5. $7.14 \times 0.1 =$ ———— [Aswan 23]

   A. 0.714   B. 71.4   C. 7.140   D. 714

6. $8.43 \times 0.2 \approx$ (to the nearest Hundredths)   [Giza 23]

   A. 1.686   B. 1.7   C. 1.69   D. 2

7. $300 g =$ ———— kg [Giza - Awseem 23]

   A. 0.3   B. 3   C. 0.03   D. 0.003

8. $3.6 \div 0.04 =$ ———— [Cairo - Heliopolis 23]

   A. 0.9   B. 90   C. 0.09   D. 0.009

9. ———— $\times 0.01 = 4.12$ [Souhag 23]

   A. 412   B. 4,120   C. 41,200   D. 0.412

10. $0.6 \times 0.5 =$ ———— [Souhag 23]

   A. 30   B. 3   C. 0.3   D. 0.65

11. $4.1 \times 1.1 =$ ———— [El-Beheira - 23]

   A. 45.1   B. 451   C. 0.451   D. 4.51

12. $3.25 \times 0.1 =$ ———— [Cairo 23]

   A. 325   B. 32.5   C. 3.25   D. 0.325

13. 95 millimeters = ———— cm [Port Said 23]

   A. 9.5   B. 0.95   C. 0.0095   D. 0.095

14. 10.870 gram = ———— kg [Cairo - Heliopolis 23]

   A. 10.87   B. 108.7   C. 1.87   D. 1087

15. $4.25 \bigcirc 2.2 \div 0.1$ [Cairo 23]

   A. =   B. <   C. >

16. $23 \div 0.1 =$ ———— [Alexandria 23]

   A. 23   B. 230   C. 2.3   D. 0.23

17. $0.35 \div 0.5 =$ ———— [Alexandria - West 23]

   A. 7   B. 0.007   C. 0.07   D. 0.7

18. The quotient of $2.4 \div 0.4 =$ ———— [Cairo 23]

   A. 11   B. 6   C. 0.6   D. 1.6

19. $0.4 \times 0.6 =$ ———— [El Beheira 23]

   A. 24   B. 2.4   C. 0.24   D. 0.024

53

20. $58.675 \times 0.10 =$ ————   [El Beheira 23]

   A. 58.675   B. 5.8675   C. 586.75   D. 60

3. Answer each of the following.

  1. Find the result of : 2.14×2.7 [Cairo 23]

  2. Use any strategy to find. (with steps)

    a. 1.74×3.5 [Ismailia 23]

    b. 2.43×3.4 [Ismailia 23]

    c. 29.76×6.4 [Ismailia 23]

  3. Ant walks 0.2 km on a day. How many meters does it walk ?   [Ismailia 23]

  4. Ali bought 9 cans of soda , if the price of one can is 6.5 pounds. How much money did Ali

    pay ?   [Cairo - El Sherouk 23]

  5. A rope that is 4.5 meters long is cut into 3 equal pieces. How long is each piece ?

                                               [Aswan 23]

  6. If the price of a bottle of juice is 14.5 L.E. what is the price of 15 bottles of the same juice?

                                             [El Beheira 23]

  7. Ali has 6.72 m of wire , if he decided to cut it into 16 pieces.

    What is the length of each piece ?   [Souhag 23]

54

1. Complete.

1. $3.3 \div 3 \times 10 =$ _____   [Alexandria - West 23]

2. $1.3 , 1.7 , 2.1 , 2.5 ,$ _____ $, 3.3$ (In the same pattern)   [El Monofia 23]

3. $5 , 10 , 20 , 40 ,$ _____ (in the same pattern)   [El Menia 23]

4. $85 , 80 , 75 ,$ _____ Rule _____   [Cairo - El Marg 23]

5. In the pattern : $5 , 10 , 15 , 20 , \cdots$, the rule is _____   [Giza - Awseem 23]

6. $1.5 , 3 , 4.5 , 6 ,$ _____   [Aswan 23]

7. $23 , 27 , 31 , 35 ,$ _____ (in the same pattern)   [El Beheira 23]

8. $0 , 3 , 6 , 9 , 12 ,$ _____   [Cairo - El Zaiton 23]

9. In the pattern : $3 , 5 , 7 , 9 , \cdots$, the rule is _____   [Giza 23]

10. $15 \div 3 + 2 =$

11. $1.3 + 3\ 45 \times 8 - 2.02 =$ _____

12. The first operation to evaluate the expression .

   $(9.4 - 3.4) \div 2 + 55 \times 10$ is _____

13. The expression which matches the clue "Subtract 12.4 from the result of multiplying 8.5 by 3.2" is _____ and its value is _____

14. In the opposite table, the rule of the pattern is _____

input	1	2	3	4
output	5	10	15	20

15. In the opposite table, the rule of the pattern is _____

input	output
7	9
9	11
11	13
13	15

2. Choose the correct answer.

[El Beheira 23]

1. $6 + 2.4 \times 10 =$ _____

   A. 84   B. 0.84   C. 20   D. 30

55

2. $2.3 \div 0.1 + 10 =$

    A. 230   B. 10.23   C. 33   D. 0.33

3. $1.25 \times 4 \div (6 - 1) =$

    A. 100   B. 0.1   C. 0.01   D. 1

4. The operation must done first to calculate : $50 - 8 + 1.2 \times 10 \div 0.1$ is _____

    A. addition   B. subtraction   C. multiplicaton   D. division

5. Subtract 2.2 from 6.42 and multiply the result by 3 , then the expression is _____

    A. $2.2 \times 3 - 6.42$ B. $3 \times 6.42 - 2.2$ C. $6.42 - 2.2 \times 3$ D. $(6.42 - 2.2) \times 3$

6. Which expression matches the clue "Multiply 5.4 by 100 , next add 18 , last divide the result by 9" ?

    A. $5.4 \times 100 + 18 \div 9$ B. $5.4 \times (100 + 18) \div 9$

    C. $(5.4 \times 100) + 10 \div 9$ D. $(5.4 \times 100 + 18) \div 9$

7. The rule of the pattern : $3 , 7 , 11 , 15 , ... ,$ is _____

    A. $n - 4$ B. $n + 4$ C. $n \times 4$ D. $n \div 4$

8. The rule of the pattern : $1 , 2 , 5 , 14 , ... ,$ is _____

    A. $n + 1$ B. $n \times 2 - 1$ C. $n \times 3 - 1$ D. $n \times 2 + 1$

9. $3 , 5 , 7 , 9 , 11 ,$ _____ (in the same pattern)

    A. 21   B. 15   C. 13   D. 12

10. The rule of the pattern is _____

    A. $n + 1.5$ B. $n \times 2$

    C. $n + 2$ D. $n \times 1.5$

input	output
3	4.5
4	6
5	7.5
6	9

11. The missing number in the opposite pattern is _____

    A. 12   B. 15

    C. 21   D. 28

input	output
4	9
5	11
6	13
7	....
8	17

12. The second step to evalute the expression $9.3 \times 0.1 + 4.7 - 1.1$ is _____

    A. 9.3×0.1 B. 9.3×4.8 C. $0.93 + 4.7$ D. $0.93 + 1.1$

13. 16 , 8 , 4 , ————— [in the same pattern]

A. 4   B. 1   C. 2   D. 8

14. $1.2 + 0.24 \times 10 =$ —————

A. 14.4   B. 0.36   C. 3.6   D. 36

15. $15 \div 5 + 7 =$

A. 5   B. 7   C. 3   D. 10

---

3. Answer each of the following.

1. Subtract 3.1 from 4.6 , then multiply the result by 0.01   [Giza – Awseem 23]

2. Write the expression that matches the clue. Then, evalute the expression.
   Subtract 2.1 from 5.2 , then multiply the result by 100

3. Use the order of mathematical operations to evalute: $4.2 + 24 \div 4 + 8$

4. Lucinda had 2,000 pounds. She bought 10 balls for 33 pounds each and 10 toys for 27 pounds each. How much money is left with Lucinda ?

5. Use the order of mathematical operations to evalute the expression :
   $7 + 3 \times [5 - (3 \times 1)] - 12 \div 10$

Directorates Exams

Cairo Governorate

Nasr City Educational Zone
St. Fatima Language School

1. Choose the correct answer :

1. $36 \div \rule{2cm}{0.4pt} = 9$

   A. 4   B. 5   C. 3   D. 6

2. The product of 193 × 19 is near close to ————

   A. 4,000   B. 40   C. 400   D. 40,000

3. There are ———— L in 41,000 mL

   A. 410   B. 41   C. 410,000   D. 4

4. 327 × 53 ——— 199 × 43

   A. >   B. <   C. =   D. ≤

5. In $56.4 + x = 96$, the variable is ————

   A. 56.4   B. x   C. 96   D. 6.5

6. If $3.462 - x = 1.451$, then x = ————

   A. 4.913   B. 2.011   C. 4.914   D. 2.001

7. In the equation $24 \div 4 = 6$, the remainder is ————

   A. 1   B. 2   C. 0   D. 4

2. Complete :

1. ———— × 100 = 86.2

2. 800 g = ———— kg

3. In 342.18 , the digit 8 is in the ———— place and its value is ————

4. 0.9986 ≈ ———— (to the nearest Thousandths).

5. If $y - 4.413 = 6.150$, then y = ————

6. The common multiple for all numbers is ————

7. 65 × ———— = 6,500

8. Sixteen and seven tenths = ———— + ———— + ————

3. Choose the correct answer :

1. 7 tenths ——— 0.699

   A. >   B. <   C. =   D. ≤

2. 17.400 ——— 17.4

   A. >   B. <   C. =   D. ≥

59

3. Which of the following is an equation ?

   A. $50 + b$ B. $50 + b = 75$

   C. $3.5 + k$ D. Mai saved 30 L.E. per day

4. ✻ The rule of the pattern : 2 , 5 , 8 , 11 , ... is ――――.

   A. $n + 2$ B. $n + 3$ C. $n \times 3$ D. $n \times 3 - 1$

5. The number four and forty-one thousandths in standard form is ―

   A. 4.41   B. 4.041   C. 410.4   D. 4.401

6. ✻ The prime factors of 14 are ――――

   A. 1 and 14   B. 2 and 14   C. 1 and 7   D. 2 and 7

7. 45.9 − 20.76 estimate to ――――

   A. 18   B. 25   C. 31   D. 35

4. Answer the following questions :

1. Find the G.C.F and L.C.M of 12 and 16.

2. Solve the problem using an area model $42 \times 51 =$ ――

3. Ali walks 6 kilometres each day. If he walked 187 days , how many kilometers would he walk ?

4. Hossam has 28 cans. He wants to divide it equally on 7 tables. How many cans will be on each table ?

2 ――― Cairo Governorate ―

1. Choose the correct answer :

1. $36.124 \times 100 =$ ――――

   A. 36.124   B. 361.24   C. 3,612.4   D. 36,124

2. What is the standard form for : $60 + 3 + 0.5 + 0.04$?

   A. 63.54   B. 63 054   C. 63.504   D. 6.354

3. ―――― is a common multiple of 9 and 6

   A. 12   B. 18   C. 24   D. 27

60

4. The value of the digit 4 in the number 98.764 is

A. $\frac{4}{10}$ B. $\frac{4}{1,000}$ C. 0.04   D. 4,000

5. $3.6 + 5.411 = $ ———

A. 5.417   B. 8.1011   C. 8.417   D. 9.011

6. If $35 \times 47 = 1,645$, then $3.5 \times 0.47 = $ ———

A. 164.5   B. 16.45   C. 1.645   D. 1645

7. The rule of the pattern 2, 5, 8, ... is ———

A. $n+1$ B. $n+2$ C. $n+3$ D. $n+4$

2. Complete :

1. $30 \div 4 = 7 R$ ———

2. If $k + 15.36 = 80.12$, then $k =$ ———

3. The common multiple of all numbers is ———

4. 15.4 grams = ——— kg

5. $36.365 \approx 36.4$ (to the nearest ———)

6. Evaluate the expression : $1.6 \div 0.1 - 50 \times 0.1 = $ ———

7. ——— is the only even prime number.

8. The next number in the pattern 5, 6.5, 8, 9.5, ... is ———

3. Choose the correct answer :

1. $17 \times 51 = $ ———

A. 687   B. 867   C. 785   D. 766

2. $5.7 \div 100 = $ ———

A. 5.7   B. 0.57   C. 0.057   D. 570

3. The prime factors of 12 are ———

A. 2 and 3   B. 1, 2 and 3   C. 2, 3 and 5   D. 2, 3 and 4

4. The equation representing a number x if added to 1.7 the sum is 2.8 is written as ———

A. $x + 1.7 = 2.8$ B. $1.7 + 2.8 = x$ C. $x + 2.8 = 1.7$ D. $1.7 \times 2.8 = x$

5. 2.5 liters = ——— milliliters

A. 0.25   B. 25   C. 250   D. 2,500

6. $3.72 - 0.05$ ——— 2.67

A. >   B. <   C. =   D. otherwise

7. $80 \div 0.08 = $ ———

A. 10   B. 100   C. 1,000   D. 8,000

61

4. Answer the following questions :

1. Find the greatest common factor G.C.F of 12 and 18

2. Hany has 3.45 meters of wire that is cutting into 5 equal pieces. Find the length of each piece of wire.

3. Mona had 95.5 L.E. She spent 33.75 L.E. Find the remainder with her.

4. Order from least to greatest : 0.65 km , 590 m , 0.8 km , 705 m

---

3 **Giza Governorate** El-Haram Educational Zone
Maths Inspection

1. Choose the correct answer :

1. 2 tenths , 5 hundredths = ———

   A. 0.205   B. 0.25   C. 0.025   D. 0.52

2. 12.500 ——— 12.050

   A. <   B. =   C. >

3. ——— is a multiple of 3

   A. 19   B. 10   C. 12   D. 25

4. $4 \times$ ——— = 4,000

   A. 10   B. 100   C. 1,000   D. 0.01

5. 7.5 kg = ——— g

   A. 75   B. 750   C. 7,500   D. 75,000

6. 45 + 0.5 = ———

   A. 45.05   B. 45.5   C. 4.55   D. 0.455

7. The benchmark decimal closest to 0.99 is ———

   A. 0   B. 1   C. 0.5   D. 1.5

---

2. Complete the following :

1. 1.248 ≈ ——— [to the nearest Tenths]

2. 0.4 + 0.24 = ———

3. A number whose prime factors are 2 , 2 and 5 is ———

62

4. If $a \times 5 = 50$, then $a = \underline{\hspace{2cm}}$

5. $81 \times 0.1 = \underline{\hspace{2cm}}$

6. If $5 \times 24 = 120$, then $5 \times 0.24 = \underline{\hspace{2cm}}$

7. $129 \div 100 = \underline{\hspace{2cm}}$

8. $29.4 \div 0.1 = \underline{\hspace{2cm}}$

3. Choose the correct answer :

1. The common multiple of all numbers is

   A. 0   B. 1   C. 2   D. 3

2. $(7.5 - 4) \times 0.1 = \underline{\hspace{2cm}}$

   A. 3.5   B. 35   C. 350   D. 0.35

3. The L.C.M of 3 and 5 is   —

   A. 8   B. 15   C. 30   D. 45

4. $0.5 \times 0.5 = \underline{\hspace{2cm}}$

   A. 25   B. 2.5   C. 0.25   D. 0.025

5. $1.5 \div 0.3 = \underline{\hspace{2cm}}$

   A. 5   B. 0.5   C. 0.05   D. 0.005

6. $0.18 \times 1,000 = \underline{\hspace{2cm}}$

   A. 1.8   B. 18   C. 180   D. 1,800

7. The value of the digit 7 in the number 5.167 is $\underline{\hspace{2cm}}$

   A. 0.7   B. 0.07   C. 700   D. 0.007

4. Answer the following questions : (with steps)

1. $75 \times 23 = \underline{\hspace{2cm}}$

2. $17.01 \div 0.7 = \underline{\hspace{2cm}}$

3. Find the G.C.F and L.C.M for the two numbers 9 and 12

4. $21.57 + 361.983 = \underline{\hspace{2cm}}$

63

1. Choose the correct answer :

1. 71 tenths =

    A. 0.71   B. 7.1   C. 71   D. 710

2. 456.25 — — 45.625

    A. <   B. =   C. >

3. 24 is a multiple of ———

    A. 16   B. 14   C. 8   D. 9

4. $14 \times$ ——— = 1.4

    A. 10   B. 100   C. 0.1   D. 0.01

5. 0.48 Liter = ——— mL

    A. 0.048   B. 4.8   C. 48   D. 480

6. 12×0.2 =

    A. 24   B. 2.4   C. 0.24   D. 240

7. The benchmark decimal closest to 0.01 is ———

    A. 0   B. 1   C. 0.5   D. 1.5

2. Complete the following :

1. 0.0257 ≈ ——— (to the nearest Thousandths)

2. 0.72 − 0.04 = ———

3. If n ~ $2 \times 2 \times 7$, then n = ———

4. If $19 \times 4 = 76$, then 1.9×0.4 = ———

5. 10 + 8 + 0.05 = ——— (In standard form)

6. 6.01 + 4.53 = ———

7. $(9 \times 27) = (9 \times$ ———$) + (9 \times 7)$

8. 29 ÷ 4 = 7 R ———

3. Choose the correct answer :

1. The common multiple of all numbers is ———

    A. 0   B. 1   C. 2   D. 3

2. ——— ÷ 10 = 0.3

    A. 30   B. 3   C. 300   D. 13

3. 2.25×10 =

    A. 225   B. 22.5   C. 2.25   D. 0.225

4. The divisor in the equation $36 \div 4 = 9$ is ———

   A. 36   B. 4   C. 9   D. 0

5. $0.27 \div 0.01 =$ ———

   A. 27   B. 270   C. 27   D. 0.027

6. Which is common multiple of 5 and 10 ?

   A. 20   B. 15   C. 35   D. 45

7. The value of the digit 6 in the number 28.61 is ———

   A. 0.6   B. 0.06   C. 600   D. 0.006

4. Answer the following questions : (with steps)

1. Use the mathematical order of operations to calculate . $[4.3 + 0.7] \times 0.3$

2. $245 \div 0.7 =$ ———

3. Find the G.C.F and L.C.M for the two numbers 9 and 15.

4. $56.35 + 25.04 =$ ———

5	Alexandria Governorate	Al-Agamy Education Zone Maths Supervisor

1. Choose the correct answer :

1. The value of the digit 4 n the number 1.648 is ———

   A. 4   B. 0.4   C. 0.04   D. 0.004

2. Rounding the distance 450.157 km to the nearest Hundredths is ———

   A. 500   B. 450   C. 450.2   D. 450.16

3. The rule of the pattern: $2, 6, 18, 54, \dots$ is ———

   A. $n \times 2$ B. $n + 4$ C. $n \times 3$ D. $n \div 2$

4. $2, 3$ and 5 are all the prime factors of the number ———

   A. 30   B. 235   C. 10   D. 25

5. Subtract 4.1 from 6 , then divide the result by $2 =$ ———

   A. $6 - 4.1 \div 2$ B. $[6 - 4.1] \div 2$ C. $10.1 \div 2$ D. $6 - [4.1 \div 2]$

6. $54 \times a = 18 \times 54$, then $a =$ ————

   A. 972   B. 54   C. 18   D. 3

7. $4.208 =$ ———— $+ 0.2 + 0.008$

   A. 4   B. 40   C. 0.4   D. 400

2. Complete :

1. $169.4 \div 100 =$ ————

2. If $66.85 + k = 90.98$, then $k =$ ————

3. The common factor of all numbers is ————

4. $(70 \times 30) + (70 \times 5) + (4 \times 30) + (4 \times 5) =$ ———— $\times$ ————

5. Two hundred thirty-five thousandths = ———— [In standard form]

6. $6.2 \div 0.62 =$ ————

7. The product of $0.24 \times 3.6 =$ ————

8. 5 tenths = ———— hundredths

3. Choose the correct answer :

1. 28 is one of the multiples of number ————

   A. 7   B. 8   C. 5   D. 6

2. $67 g =$ ———— kg

   A. 67,000   B. 670   C. 6,700   D. 0.067

3. $4.25 \times 0.1 =$ ————

   A. 4.25×100 B. 42.5   C. $4.25 \div 10$ D. 0.0425

4. The greatest common factor G.C.F of the numbers 5 and 10 is ————

   A. 5   B. 10   C. 15   D. 50

5. The next number in the pattern : $5 , 8 , 11 , 14 , \dots$ is ————

   A. 15   B. 16   C. 17   D. 11

6. Which of the following is an equation ?

   A. $1.5 + 1.3$ B. $9.1 - 6.31$ C. 0.5×8 D. $n + 23.6 = 40$

7. Which of the following is true ?

   A. $0.832 > 0.837$ B. $\frac{16}{10} = 1.6$ C. $0.1 + 3 < 1.3$ D. $1.019 > 1.1$

4. Answer the following questions :

1. Evaluate the expression : $9.3 + (0.427 \times 100)$

66

2. Ahmed bought 7 pens of the same type. If the price of one pen is 8.5 pounds , How much will Ahmed pay ?

3. Find the least common multiple L.C.M of 4 and 6

4. Find the quotient : 1,024 ÷ 16

6 El-Kalyoubia Governorate

Maths Supervision
Directorate of Education

1. Choose the correct answer :

1. The place value of the digit 3 in the number 6.03 is ————

A. Tenths   B. Tens   C. Hundredths   D. Hundreds

2. 2.59 ——— 2.569

A. <   B. >   C. =   D. ≤

3. Ayman wants to write an equation represents "Adding a number to 7.5 to get the result 9.8", then the equation is ————

A. $7.5 + 9.8 = x$ B. $9.8 + x = 7.5$ C. $7.5 + x = 9.8$ D. $75 + x = 98$

4. The G.C.F of 6 and 12 is ————

A. 2   B. 3   C. 4   D. 6

5. $0.076 = \text{————} \times 7.6$

A. 10   B. 0.1   C. 0.01   D. 0.001

6. $0.725 \, kg = \text{————} \, g$

A. 725   B. 7,250   C. 72.5   D. 7.25

7. $4.5 \times 2 - 4.2 + 2.8 = \text{————}$

A. 2   B. 7.6   C. 9   D. 6.7

2. Complete :

1. The fraction which represents 0.81 is————

2. The standard form of $90 + 5 + 0.06$ is ————

3. The value of D in the opposite bar model is ————

D	
4.2	3.25

4. $3.4 \times 4 =$

5. $26 \times 3 = (20 \times \text{————}) + (\text{————} \times 3) = 60 + 18$

67

6. Estimate : 4.9 + 57.2 = ——— (Using front end strategy)

7. In the pattern : 25 , 30 , 35 , 40 , ... , the rule is : ———

8. In the opposite area model , the missing numbers are ——— and ———

	2	0.5
1	2	
0.3	———	0.15

3. Choose the correct answer :

1. The number which its prime factors are 2 , 2 , 3 and 3 is ———

    A. 36   B. 24   C. 12   D. 8

2. 7.86 ≈ ——— [to the nearest Tenth].

    A. 7.9   B. 7   C. 8   D. 8.9

3. 3 Hundredths + 5 Tenths = ——— Hundredths

    A. 8   B. 35   C. 53   D. 3

4. 9.4 − 5.03 = ———

    A. 4.37   B. 43.7   C. 4.43   D. 4.1

5. 70 × ——— = 7,000

    A. 1   B. 10   C. 100   D. 1,000

6. 50.5 ÷ 0.5 = ———

    A. 1.01   B. 101   C. 11   D. 1.1

7. L.C.M of 4 and 8 is ———

    A. 8   B. 4   C. 2   D. 1

4. Answer the following questions :

1. Youssef saves 87 L.E. every month. Find the total sum of money which he will save in 10 weeks.

2. A man paid 15 pounds to buy three pens. Find the price of each pen.

3. Doaa saved five times which Walaa saved. If Doaa saved 35 L.E. , find the money which Walaa saved

4. If the height of Laila is 94.4 cm and the height of Nadia is 82.2 cm , find the increase of the height of Laila than Nadia.

68

7 : **El-Sharkia Governorate** ·   Menia El-Qamh
Mathematics Inspection

1. **Choose the correct answer :**

1. $4.7 \times 1,000 =$ ———

   A. 47   B. 470   C. 4,700   D. 0.47

2. $3 \begin{array}{|c|c|} \hline 60 & 5 \\ \hline 180 & 15 \\ \hline \end{array}$ represents ———

   A. $63 \div 5$ B. $65 \div 3$ C. $165 \div 3$ D. 65×3

3. $(78 \times 72) = (70 \times 78) + ($ ——— $\times 78)$

   A. 70   B. 2   C. 8   D. 7

4. The divisor in the division $54 \div 9 = 6$ is ———

   A. 54   B. 9   C. 6   D. 0

5. The common factor of all numbers is ———

   A. 2   B. 3   C. 0   D. 1

6. $2.1 \times 0.1 =$ ———

   A. 0.21   B. 10.5   C. 21   D. 2,100

7. $3.2 \div 4 =$ ———

   A. 0.4   B. 0.6   C. 1.4   D. 0.8

8. $8 + 16 \div 2 - 16 =$ ———

   A. 24   B. 0   C. 32   D. 12

9. If $3.23 + p = 11.25$, then $p =$ ———

   A. 8.02   B. 8   C. $14 - 48$ D. 7.02

10. The value of 7 in the number 63.783 is ———

   A. 0.7   B. 7   C. 0.07   D. 0.007

11. 35 Hundredths – 2 Tenths = ——— Hundredths.

   A. 15   B. 55   C. 12   D. 32

12. $7.672 \approx 7.7$ is rounded to the nearest ———

   A. Hundred.   B. Tenths.   C. Hundredths.   D. Thousandths.

13. 6.3 is 100 times as ———

   A. 0.63   B. 63   C. 0.063   D. 630

14. The place value of the underline digit 0.7̲34 is ———

   A. Tenths   B. Zero   C. Hundredths   D. Ones

69

2. Complete :

1. $60 + 4 + 0.05 + 0.009 =$ —————— (In standard form)
2. —————— is the only even prime number.
3. 3.17 read as three and seventeen —
4. 7.355 km = —————— m
5. The result of $13.51 + 1.9 =$ ——————
6. The L.C.M of 3 and 6 is ——————
7. 52.826 in expanded form is $52 + 0.8 +$ —————— $+$ ——————
8. 8.639 rounded to the nearest Hundredths is ——————

3. Solve showing steps :

1. Find G.C.F of 9 and 12

2. a. $52.236 - 2.35 =$ ——————

   b. $375 \div 15 =$ ——————

3. $15 \times 23 =$ ——————

4. Reem bought a piece of cloth with a length of 5 meters. If the price of one meter of cloth is 3.8 L.E. , How much is the total cost ?

8 El-Monofia Governorate

El-Sadat Educational Zone
Math's Supervision

1. Choose the correct answer :

1. The common factor of all numbers s ——————
   A. 0   B. 2   C. 1   D. 10
2. 5 km = —————— m
   A. 50   B. 5,000   C. 500   D. 5
3. $3.6 + 5.411 =$
   A. 5.447   B. 8.1011   C. 8.417   D. 9.011
4. If $125 \times 5 = 625$, then $626 \div 5 = 125$ R ——————
   A. 3   B. 1   C. 5   D. 2
5. $3.94 \times 10 =$ ——————
   A. 3.94   B. 39.4   C. 0.394   D. 394

70

6. The L.C.M of 6 and 10 is————

A. 60   B. 30   C. 15   D. 45

7. The divisor in the equation $36 \div 4 = 9$ is————

A. 36   B. 9   C. 4   D. zero

2. Complete :

1. $1,000 \times$ ———— $= 60,000$

2. ———— is the only even prime number.

3. ✳ $20 + 0.02 + 5 + 0.003 =$ ———— (In standard form)

4. The value of digit 3 in the number 4.315 is ————

5. In the pattern : $3 , 5 , 7 , 9 , 11 , ... ,$ the rule is ————

6. $3 + 3$ tenths $+ 3$ hundredths $=$ ————

7. $36.479 \approx 36.5$ (to the nearest————)

8. The smallest odd prime number is ————

3. Choose the correct answer :

1. $316 \div 10 =$ ————

A. 31.6   B. 3.16   C. 0.316   D. 3,160

2. What is the Ones digit of the product of 456×24 will be without solving the whole problem ?

A. 3   B. 4   C. 5   D. 6

3. ✳ $3.45 \times 0.001 =$ ————

A. 0.0345   B. 0.345   C. 345   D. 0.00345

4. There are 5,000 millimeters in———— liters.

A. 5   B. 50   C. 5,000,000   D. 500

5. 4 Thousandths $+$ 3 Thousandths $=$ ———— Thousandths.

A. 70   B. 7   C. 43   D. 7.7

6. The common multiple of all numbers is ————

A. 1   B. 2   C. 0   D. 3

7. $2,323 \div 23 =$ ————

A. 11   B. 11.1   C. 1.1   D. 101

4. Answer the following questions :

1. Farida saved 17.25 pounds and her brother Murad saved 8.5 pounds. Find the sum they saved.

71

2. Find G.C.F and L.C.M of 12 and 18

3. Solve the following equations :

a. $T - 2.45 = 0.26$ b. $2.56 + x = 3.8$

4. Find the result (Show steps) :

a. $1,477 \div 12 =$ ——   b. $75 \times 23 =$ ——

9 **El-Gharbia Governorate**   Central Mathematics Supervision

1. Choose the correct answer :

1. $44 \div 7 = 6$ and remainder ——

     A. 1   B. 2   C. 3   D. 4

2. $123 \div 123 =$ ——

     A. 1   B. 2   C. 3   D. 4

3. 3 liters = —— millilitres.

     A. 30   B. 300   C. 3,000   D. 3

4. —— $\div 4 = 80$

     A. 20   B. 320   C. 480   D. 800

5. $20 \times 50 =$ ——

     A. 100   B. 1,000   C. 2,500   D. 25

6. $(200 + 30 + 3) \times (30 + 5) =$ ——

     A. 223×35 B. 233×35 C. 233×53 D. 233×8

7. 20 pounds = —— piasters.

     A. 20   B. 200   C. 2,000   D. 2

2. Complete the following :

1. $1.2 \div 0.4 =$ ——

2. If $30 \div 5 = 6$, then 5 is called ——

3. $200 \div 10 =$ ——

4. $2.3 \times 1,000 =$ ——

72

5. The smallest odd prime number is ———

6. 17 has ——— factors only.

7. 8 kg = ——— g

8. 12 × 12 = ———

---

3. Choose the correct answer :

1. One of the multiples of 2 is ———

   A. 7   B. 8   C. 3   D. 11

2. 325 is divisible by ———

   A. 5   B. 3   C. 2   D. 9

3. The common factor of all numbers is ———

   A. 0   B. 1   C. 2   D. 3

4. zero ÷ 235 =

   A. 0   B. 1   C. 2   D. 23

5. $2\frac{1}{2}$ days = ——— hours.

   A. 50   B. 60   C. 24   D. 48

6. ✱ 2 and 5 are prime factors for the number ———

   A. 10   B. 25   C. 7   D. 52

7. $\frac{1}{4}$ kg = ——— g

   A. 250   B. 500   C. 125   D. 1

---

4. Answer the following questions :

1. Find G.C.F of 20 and 24

2. Find with steps by any way 2,250 ÷ 25

3. 8 friends everyone has 122 pounds. Find the total amount of money.

4. Find : 2.33 × 2.4 [With steps]

10 **El-Dakahlia Governorate**   Maths Supervision

1. Choose the correct answer :

1. Seven ones , thirty-eight thousandths = ————
   - A. 7.38
   - B. 70.38
   - C. 7.038
   - D. 38.7

2. The number ———— is one of multiples of the number 8
   - A. 20
   - B. 28
   - C. 32
   - D. 45

3. The prime factors of the number 18 are ————
   - A. 1 and 18
   - B. 2 , 3 and 3
   - C. 3 and 6
   - D. 2 and 9

4. The value of the variable k in the equation : $k - 2.5 = 4$ is ————
   - A. 3.5
   - B. 2.5
   - C. 4
   - D. 6.5

5. $57.3 × 0.1 =$ ————
   - A. 0.573
   - B. 5.73
   - C. 573
   - D. 5,730

6. $36 ÷ 9 + 0.6 =$ ————
   - A. 4.6
   - B. 6.4
   - C. 10
   - D. 46

7. The composite number in the following numbers is ————
   - A. 3
   - B. 7
   - C. 5
   - D. 15

2. Complete the following :

1. 785 cm. = ———— m
2. L.C.M for two numbers 6 and 9 is ————
3. The product of $12.4 × 0.3 =$ ————
4. 8 Thousandths + 65 Hundredths = ———— Thousandths.
5. The quotient of $8.46 ÷ 0.2 =$ ————
6. G.C.F. for two numbers 14 and 35 is ————
7. The number 68.769 approximating to the nearest Hundredths is ————
8. 6 , 12 , 18 , ———— (in the same pattern).

3. Choose the correct answer :

1. The number ———— is a common factor for all numbers
   - A. 0
   - B. 1
   - C. 2
   - D. 3

2. $327.54 ≈$ ———— (to the nearest whole number)
   - A. 327
   - B. 327.5
   - C. 328
   - D. 330

3. The value of the digit 9 in the number 7.829 is ————
   - A. 9
   - B. 0.9
   - C. 0.09
   - D. 0.009

74

4. $93.4 \times 100 =$ ―――――

    A. 0.934   B. 934   C. 9,340   D. 93,400

5. 5.6 liters = ――――― mL.

    A. 0.056   B. 56   C. 560   D. 5,600

6. $45.5 \div 5 =$ ―――――

    A. 0.91   B. 9.1   C. 91   D. 910

7. The digit in the Tenths place in the number 83.25 is ―――――

    A. 8   B. 3   C. 2   D. 5

4. Answer the following questions :

19.6	
x	3.2

1. In the opposite model , find the value of variable x

2. Rasha bought 3.75 kg of flour , she bought another 2.25 kg of it. How much flour did she have ?

3. Ahmed runs a distance of 2.35 km per day. What is the distance that he run in 10 days ?

4. Samy works as a plumber. He has 16.4 meters of copper pipe that he needs to cut into 4 equal-sized smaller pipes. How long will each pipe be ?

11 ― Ismailia Governorate   Math's Supervision

1. Choose the correct answer from those given :

1. The prime number in which the sum of its factors equals 8 is ―――――

    A. 5   B. 7   C. 8   D. 16

2. The expanded form : $1 + 0.7 + 0.07 =$ ―――――

    A. 1.71   B. 77.1   C. 1.77   D. 17.7

3. $1.2 \times 2.1 =$ ―――――

    A. 2.25   B. 2.52   C. 52   D. 2

4. The L.C.M. of the two numbers 3 and 2 is ―――――

    A. 2   B. 3   C. 4   D. 6

75

5. The value of x in the equation : x + 5 = 8.5 is ――――

   A. 3.5   B. 13.5   C. 1.5   D. 5.3

6. If $215 \div 43 = 5$, then the divisor is

   A. 5   B. 43   C. 34   D. 215

7. $6.5 \times$ ―――― $= 6,500$

   A. 1   B. 10   C. 100   D. 1,000

2. Complete :

1. ―――― Is a common factor of all numbers.

2. If b − 25 = 4 , then the value of b = ――――

3. 140 cm = ―――― meters

4. The number in which its factors are one and itself is ―――― number.

5. The next number in the pattern : 1 , 15 , 2 , ... is ――――

6. The weight of one fruit box is 3 kg , then the weight of 10 boxes = ―――― kg

7. If we divide 18 plums equally into 3 bags , the number of plums in each bag is ―――― plums.

8. $54 \div 5 =$ ―――― and reminder 4

3. Choose the correct answer from those given :

1. 0.9 is closer to

   A. 0.5   B. 0.6   C. 1   D. 0.25

2. 2.3 − 0.3 = ―

   A. 2   B. 3   C. 2.33   D. 23

3. The number that if divided by 10 , the result is 96 is ――――

   A. 609   B. 960   C. 906   D. 690

4. 42.15 ≈ ―――― to the nearest one decimal place.

   A. 42.1   B. 42   C. 42.2   D. 42.05

5. Factorize the number 30 to its prime factors is

   A. $2 \times 3 \times 3$ B. $5 \times 5 \times 2$ C. $3 \times 3 \times 3$ D. $5 \times 3 \times 2$

6. The value of the digit 8 in the number 5.018 is ――――

   A. 0.8   B. 0.08   C. 0.008   D. 8

7. $120 \div 12 =$ ――――

   A. 10   B. 20   C. 12   D. 21

4. Answer the following questions :

1. Find the result of : 2,736 ÷ 36 = _____ — [Using the strategy you prefer]

_____

2. Mona bought 24 pens , the price of each pen is 1.24 pounds.
   How much money did Mona pay ?

_____

3. Find the G.C.F and L.C.M of 10 and 12. Using factorizing to the prime factors.

_____

4. Maged run 2.569 km at the first day ,and 1.269 km in the second day.
   What is the difference between the two distances ?

_____

| 12 | Suez Governorate | | Directorate of Education
Maths Supervision |

1. Choose the correct answer from those given :

1. The number four and forty-one thousandths in standard form is _____

   A. 4.41   B. 4.041   C. 410.1   D. 4.401

2. Which of the following is true ?

   A. 0.532 > 0.537   B. 0.1 + 3 < 1.3   C. 1.099 > 1.1   D. $\frac{18}{10} = 1.8$

3. 2,892.5 + 5,137.05 = _____

   A. 8,029.55   B. 8,029.5   C. 8.03   D. 8.029

4. 1 and 7 are common factors of _____

   A. 2 and 7   B. 2 and 14   C. 2 and 12   D. 7 and 14

5. 50 km = _____ m.

   A. 500   B. 5,000   C. 50,000   D. 500,000

6. (100 + 100 + 70 + 4) × (6 + 80) = _____

   A. 174 × 86   B. 174 × 68   C. 274 × 86   D. 274 × 68

7. The divisor in the equation 48 ÷ 6 = 8 is _____

   A. 48   B. 6   C. 8   D. 0

2. Complete the following :

1. 4 Hundredths + 35 Thousandths = _____ Thousandths.

77

2. The first five multiples of 5 are ———

3. The L.C.M of 5 and 10 is ———

4. $14.14 \times 0.1 =$ ———

5. $142 \text{ cm} = 142 \div$ ——— $=$ ——— m.

6. $58.473 \approx 58.5$ to the nearest ———

7. $4.651 \div 1 =$ ———

8. 1 is not prime number because ———

3. Choose the correct answer from those given :

1. $0.067 \times 1,000 =$ ———
   A. 6.7   B. 67   C. 0.067   D. 670

2. $2.5 \text{ L} =$ ——— mL
   A. 2,500   B. 250   C. 25   D. 0.25

3. ——— $\times 0.01 = 5.36$
   A. 0.536   B. 536   C. 53.6   D. 5.3600

4. $2.6 \div 2 =$ ———
   A. 1.2   B. 1.3   C. 1.4   D. 0.13

5. $83 + 45 \div 9 - 5 =$ ———
   A. 23   B. 32   C. 80   D. 83

6. The rule of pattern : $3, 7, 11, 15, ...$ is ———
   A. $n - 4$ B. $n + 4$ C. $n \times 4$ D. $n \div 4$

7. The value of the varible A in the equation $77.85 + A = 99.85$ is ———
   A. 177.7   B. 33.5   C. 22   D. 12.5

4. Answer the following questions :

1. ✳ Use the order of mathematical operations to evalute the expression :
   $10 - [(10 + 2) \div 3] \times 2$

2. Find G.C.F of the two numbers 8 and 12

3. If the price of 12 books is 480 pounds , then find the price of each book.

4. The price of one toy is 15.5 L.E. Find the price of 5 toys.

13 El-Beheira Governorate

1. Choose the correct answer :

1. The value of digit 3 in the number 14.239 is ————
   - A. 30
   - B. 0.3
   - C. 0.03
   - D. 0.003

2. $0.4 \times 0.6 =$ ————
   - A. 24
   - B. 2.4
   - C. 0.24
   - D. 0.024

3. If $8.23 + p = 10.24$, then $p =$ ————
   - A. 18.47
   - B. 2.47
   - C. 2.01
   - D. 24.1

4. $6 + 2.4 \times 10 =$ ————
   - A. 84
   - B. 0.84
   - C. 20
   - D. 30

5. $2.153 \approx$ ———— (to the nearest Tenths)
   - A. 2.1
   - B. 2.15
   - C. 2.14
   - D. 2.2

6. The least common multiple L.C.M for 12 and 6 is ————
   - A. 12
   - B. 10
   - C. 6
   - D. 40

7. $2 \div 0.4 =$ ————
   - A. 2
   - B. 10
   - C. 5
   - D. 8

2. Complete :

1. 3 Hundredths + 35 Thousandths = ———— Thousandth(s)
2. $23 , 27 , 31 , 35 ,$ ———— (in the same pattern).
3. ✳ In the rule $n + 4$, the input is 7 , then the output is ——
4. $123 \times 0.01 =$ ————
5. Three and twenty-five thousandths = ————
6. $36 \text{ cm} =$ ———— m
7. The operation in the opposite area model is ✕ ————
8. $8 + 0.2 + 0.03 + 0.006 =$ ———— (in the standard form).

	5	0.6
4	20	2.4
0.2	1.0	0.12

3. Choose the correct answer :

1. $23.4 \div$ ———— $= 2.34$
   - A. 10
   - B. 100
   - C. 1,000
   - D. 0.01

2. 25.12 —— 25.056
   - A. >
   - B. <
   - C. =

3. ———— is a prime number.
   - A. 1
   - B. 3
   - C. 9
   - D. 15

4. Which of the following represents the equation ?
   - A. $4.8 + 2.5$
   - B. $x - 3.14 = 5$
   - C. $y + 4.8$
   - D. $9 - b$

79

5. 3 tenths × 4 tenths =

   A. 12 tenths   B. 12 hundredths   C. 12 thousandths   D. 12 ones

6. Use front end estimation to estimate 42 × 69 = ——

   A. 2,400   B. 2,800   C. 3,200   D. 3,600

7. 1,500 ÷ 50 =

   A. 3   B. 30   C. 300   D. 3,000

4. Answer the following questions :

1. Find the greatest common factor G.C.F of 12 and 18

2. If the price of a bottle of juice is 14.5 L.E. what is the price of 15 bottles of the same juice ?

3. ✱ Arrange from least to greatest : 0.58 , 8.05 , 5.8 , 8.005

4. A school with 779 students , distributed equally into 19 classes.
   Find the number of students in each class ?

14   El-Fayoum Governorate   West Administration
Azza Zedan Language School

1. Choose the correct answer :

1. 54.318 × 100 = ——

   A. 54.318   B. 543.18   C. 5,431.8   D. 54,318

2. In the number 161.527 , which digit in the Hundredths place ?

   A. 1   B. 2   C. 6   D. 7

3. 2.4 > ——

   A. 2.40   B. 4.2   C. 1.95   D. 3.5

4. 250 + 0.2 + 0.05 = ——

   A. 25.25   B. 250.25   C. 250.205   D. 25.205

5. 13.58 + —— = 17.27

   A. 3.69   B. 4.31   C. 30.85   D. 30.69

6. 4 × 354 = (4 × 300) + (4 × 50) + [——]

   A. 4 × 4   B. 4 × 40   C. 4 × 400   D. 40 × 40

80

7. $9.782 \approx$ ———— (to the nearest Tenths)

    A. 10   B. 9.8   C. 9.88   D. 9.7

---

2. Complete each of the following :

1. In 35.627 , the digit 7 represents ————

2. $17.416 \approx$ ———— (to the nearest Hundredths)

3. $426.3 \div 10 =$ ————

4. The prime factors of 14 are ———— and ————

5. The G.C.F of 8 and 4 is ————

6. $7,000 \ g =$ ———— kg

7. The sum of $2.817 + 1.183 =$ ————

8. The number $5 + 0.3 + 0.01 + 0.007$ in the standard form is ————

---

3. Choose the correct answer :

1. $1.5 \times 1.5 =$ ————

    A. 1.25   B. 2.25   C. 6.25   D. 30

2. $1,234 \times 25 =$ ————

    A. 30,850   B. 30,854   C. 30,751   D. 30,755

3. $5,555 \div 55 =$ ————

    A. 11   B. 101   C. 1,001   D. 110

4. * The place value of 5 in the number 3.015 is ————

    A. 0.005   B. Thousand   C. Hundredth   D. Thousandths

5. In 3 ,6 ,9 ,12 ,... the rule of the pattern is ————

    A. $n+1$ B. $n+2$ C. $n-3$ D. $n+3$

6. The number ———— is one of the multiples of the number 7

    A. 12   B. 13   C. 14   D. 15

7. The value of variable x in the equation $x+1.5 = 5$ is ————

    A. 3.5   B. 4.5   C. 5.5   D. 6.5

---

4. Answer the following questions :

1. If 120 pens are pocked each 12 to a bag , then how many bags will be there ?

————————————————————————

————————————————————————

2. Mona had 86.5 L.E. She spent 43.75 L.E Find the remainder with her.

————————————————————————

————————————————————————

Scanned with CamScanner

3. Find the L.C.M of 16 and 24

4. Use the mathematical order of operations to evaluate the following expression.

$$3.3 \div 3 \times 10 - 10$$

15 ⟸ El-Menia Governorate

Directorate of Education
Matay Zone

1. **Choose the correct answer :**

1. The value of the digit 7 in the number 2.347 is ———

    A. 70,000   B. 700   C. 0.7   D. 0.007

2. 85.2×0.01 ——— 0.0852×10

    A. >   B. <   C. =   D. $\neq$

3. If the equation $36 \div 4 = 9$, then the divisior is ———

    A. 36   B. 4   C. 9   D. 0

4. 3×5 Hundredths = ——

    A. 1.5   B. 0.15   C. 15   D. 0.015

5. If $9 \times 4 = 36$, then $0.090 \times 0.4 =$ ——

    A. 36   B. 3.6   C. 0.36   D. 0.036

6. If $7,785 \div 31 - 251$ and R 4, then $31 \times 251 =$ ———

    A. 7,784   B. 7,782   C. 7,781   D. 7,783

7. $27.68 \approx$ ——— (to the nearest whole number).

    A. 68   B. 28   C. 27   D. 27.7

2. **Complete :**

1. $0 \div 31.564 =$

2. $7 m =$ ——— cm

3. $15 \times$ ——— $= 15,000$

4. $20 + 0.05 + 0.003 =$ ——— (in the standard form).

5. $4.321 \times$ ——— $= 4321$

6. The G.C.F of 8 and 12 is

7. The number whose all prime factors are 2, 2 and 3 is ———

8. 7.7, 6.6, 5.5, 4.4, ——— (in the same pattern)

3. Choose the correct answer :

1. $4.1 \times 1.1 =$ ————
   - A. 45.1
   - B. 451
   - C. 0.451
   - D. 4.51

2. * The prime factors of 15 are ————
   - A. 1 and 3
   - B. 3 and 5
   - C. 5 and 15
   - D. 1 and 15

3. What is the Ones digit of the product of 456×24 will be without solving whole problem ?
   - A. 3
   - B. 4
   - C. 5
   - D. 6

4. Which is the first step in evaluating $28.1 - 3.5 \times 0.2 + 29 - 4$?
   - A. $28.1 - 3.5$
   - B. 3.5×0.2
   - C. $0.2 + 29$
   - D. $29 - 4$

5. $30 \times 15 =$ ————
   - A. 45
   - B. 45 tens
   - C. 45 hundreds
   - D. 45 thousands

6. $3 + 3$ tenths $+ 3$ hundredths $=$ ————
   - A. 333
   - B. 3.33
   - C. 33.3
   - D. 0.333

7. The common multiple of all numbers is ————
   - A. 0
   - B. 1
   - C. 2
   - D. 3

4. Answer the following questions :

1. Solve problem using any method. 32×71

————————————

————————————

2. If 18 plums are divided equally into 3 bags , then how many plums will be in each bag ?

————————————

————————————

3. Find L.C.M for the two numbers 8 and 12

————————————

————————————

4. Decompose the number 30.406 using the expanded form.

————————————

————————————

16 🚂 Assiut Governorate 🏛 Administration of Distinguished Governmental Language Schools

1. Choose the correct answer :

1. What is the standard form for : $50 + 4 + 0.7 + 0.09$?
   - A. 50.479
   - B. 54.79
   - C. 50.974
   - D. 5.479

2. * 36.2 mL $=$ _____ L
   - A. 36,200
   - B. 0.362
   - C. 0.0362
   - D. 362

83

3. $75 \times 43 = (70 \times 40) + (70 \times 3) + (5 \times 40) + (5 \times \underline{\quad} -)$

    A. 70   B. 40   C. 5   D. 3

4. The G.C.F of 12 and 18 is

    A. 6   B. 12   C. 18   D. 24

5. $140 \times 25 = \underline{\quad}$

    A. 35   B. 35 tens   C. 35 hundreds   D. 35 thousands

6. $9.32 + 7.68 \underline{\quad} 20.4 - 3.2$

    A. >   B. <   C. =   D. ≤

7. 19,625 milliliters = $\underline{\quad}$ Liter(s).

    A. 196.25   B. 19.625   C. 1,962.5   D. 1.9625

---

2. **Complete each of the following :**

1. By using the bar model

3.72	
x	1.5
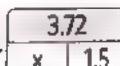
, the value of x is $\underline{\quad}$

2. $3.416 \approx \underline{\quad}$ (to the nearest Hundredths)

3. 4 Hundredths + 35 Thousandths = $\underline{\quad}$ Thousandths.

4. In 734.28 , the digit 8 is in the $\underline{\quad}$ place. Its value is $\underline{\quad}$

5. $0 \div 4,682 = \underline{\quad}$

6. $2.43 \div 0.01 = \underline{\quad}$

7. $7.7 \div 7 \times 10 - 10 = \underline{\quad}$

8. $\underline{\quad}$ is the only even prime number.

---

3. **Choose the correct answer :**

1. In the equation $54 \div 9 = 6$, the quotient is $\underline{\quad}$

    A. 54   B. 9   C. 6   D. zero

2. What is the unknown value in the area of 27×43 ?

×	40	3
20	800	?
7	280	21

    A. 6   B. 60

    C. 12   D. 120

3. If $25 \times 125 = 3,125$, then $3,126 \div 25 = \underline{\quad}$

    A. 125   B. 125 R 1   C. 126   D. 125 R 6

4. If $496 = 4 \times (A) + 9 \times (B) + 6$, then $A + B = \underline{\quad}$

    A. 100   B. 10   C. 110   D. 490

5. $4.231 \times 100 \underline{\quad} 4,231 \times 0.1$

    A. <   B. >   C. =   D. ≤

84

6. $0.3 \times 0.5 =$ ———

  A. 035   B. 0.15   C. 1.5   D. 15

7. The rule of the pattern : 2 , 6 , 10 , 14 , ... is ———

  A. $n-4$ B. $n+4$ C. $n \times 4$ D. $n \div 4$

4. Answer the following questions :

1. A crate of mangoes weights 9 kilograms. How many kilograms would 1,000 crates weight ?

2. Find G.C.F and L.C.M for the two numbers 9 and 12

3. If the price of 25 books is 107.5 pounds , find the price of each book.

4. Use an area model to complete the following :
  $4.2 \times 5.6 =$ ———
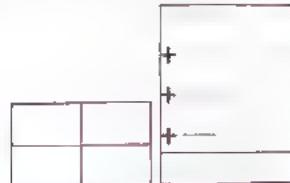
17	Souhag Governorate	Maths Supervision

1. Choose the correct answer :

1. The number 11 has ——— factors.

  A. 1   B. 2   C. 3   D. 4

2. ——— $\times 9 = 9,000$

  A. 10   B. 100   C. 1,000   D. 10,000

3. $700 g =$ ——— kg

  A. 0.7   B. 7   C. 0.07   D. 0.007

4. If $12 \times 302 = 3,624$, then $3,625 \div 12 =$ ———

  A. 302   B. 302 R 1   C. 302 R 2   D. 302 R 3

5. $1,515 \div 15 =$ ———

  A. 15   B. 11   C. 101   D. 1,001

6. L.C.M of 6 and 10 is ———

  A. 61   B. 30   C. 15   D. 45

7. There are ——— milliliters in 18 liters.

  A. 18   B. 180   C. 1,800   D. 18,000

85

2. Complete :

1. 3 , 5 , 7 , 9 , 11 , ———— (in the same pattern)
2. The value of 3 in the number 5.137 is ————
3. If 4.71 + k = 9.99 , then k = ————
4. The common multiple for all numbers is ————
5. ———— is the only even prime number.
6. The place value of the digit 5 in the number 3.514 is ————
7. 91.364 ≈ ———— (to the nearest Hundredths).
8. Million × zero ———— 7.2 × 1 (using > , < or =)

3. Choose the correct answer :

1. 0.002 × 4 = ————
   A. 8   B. 0.8   C. 0.08   D. 0.008

2. The divisor in the equation 36 ÷ 4 = 9 is ————
   A. 36   B. 4   C. 9   D. zero

3. 2.51 ÷ ———— = 0.0251
   A. 100   B. 0.001   C. 0.01   D. 0.1

4. The G.C.F of 10 and 15 is
   A. 10   B. 15   C. 5   D. 50

5. 4.1 × 1.1 = ————
   A. 45.1   B. 451   C. 0.451   D. 4.51

6. 1 and 7 are common factors of
   A. 2 and 7   B. 2 and 14   C. 7 and 12   D. 7 and 14

7. * 7 Tenths − 7 Thousandths = ————
   A. 0   B. 0.63   C. 0.693   D. 0.963

8. 42.18 × 10 = ————
   A. 4.218   B. 421.8   C. 42.18   D. 4,218

4. Answer the following questions :

1. Find the product of 32 × 12

2. Find the quotient of 144 ÷ 12

3. Find 7.38 − 2.94 = ————
4. Ola saved 17.25 pounds. Her sister saved 8.75 pounds. Find the total with them.

86

18 Qena Governorate

1. Choose the correct answer :

1. The value of the digit 5 in the number 2.657 is

A. 500   B. 5   C. 0.5   D. 0.05

2. The value of x in the equation $x + 2.5 = 9$ is ——

A. 4.5   B. 5.5   C. 6.5   D. 7

3. All the following are prime numbers except ——

A. 5   B. 7   C. 3   D. 6

4. The number ——— is a common factor for all numbers.

A. 5   B. 2   C. 1   D. 6

5. $19.59 \approx$ ——— (to the nearest whole number).

A. 19   B. 20   C. 19.5   D. 19.6

6. $4 + 0.02 + 0.007 =$ ———

A. 4.27   B. 40.27   C. 4.027   D. 4.207

7. $21.9 \times 0.1 =$ ———

A. 21.9   B. 2.19   C. 219   D. 2,190

2. Complete the following :

1. 2 Hundredths – 2 Thousandths = ———

2. The number whose all prime factors are 2, 5 and 7 is ———

3. 4.5 kg = ——— g

4. The G.C.F of 12 and 16 is ———

5. The product of $14.5 \times 12 =$ ———

6. The sum of $2.05 + 4.127 =$ ———

7. The quotient of $12.6 \div 6 =$ ———

8. The number five ones and twenty-seven thousandths in standard form is ———

3. Choose the correct answer :

1. $(5 \times 53) + (3 \times 53) =$ ——— $\times 53$

A. 5   B. 7   C. 8   D. 15

2. Thirteen and forty-one thousandths = ———

A. 13   B. 13.041   C. 13.14   D. 13.014

3. The number ——— is one of multiples of the number 5

A. 38   B. 53   C. 35   D. 6

87

4. The prime factors of the number 20 are ———

A. 2,5 and 4   B. 2,2 and 5   C. 3,2 and 10   D. 20 and 1

5. $253 \div 1,000 =$

A. 2.53   B. 0.235   C. 0.253   D. 2,530

6. The value of x in the equation $x - 5.3 = 6$ is ———

A. 11.3   B. 0.7   C. 30   D. 5.62

7. The composite number of the following is ———

A. 5   B. 2   C. 51   D. 13

4. **Answer the following questions :**

1. Ahmed bought 7 kg of orange for 7.25 L.E. each. How much money did Ahmed pay ?

2. Find L.C.M for the two numbers 9 and 12

3. Decompose the number 23.046 in the expanded form.

4. A father wants to distribute 210 L.E. among his three children. How much money did each child get ?

19   **Luxor Governorate**   **Maths Inspection**

1. **Choose the correct answer :**

1. The value of the digit 4 in the number 3.514 is ———

A. 40.000   B. 400   C. 0.4   D. 0.004

2. The only even prime number is ———

A. 2   B. 3   C. 4   D. 5

3. The number ——— is the common factor of all numbers.

A. 0   B. 1   C. 2   D. 3

4. $18.58 \approx$ ——— (to the nearest whole number).

A. 59   B. 19   C. 18   D. 18.6

5. $85.3 \times 0.01 =$

    A. 853   B. 8.53   C. 8,530   D. 0.853

6. The value of x in the equation $x + 3.5 = 8$ is _____

    A. 3.5   B. 5.4   C. 4.5   D. 5.5

7. $5 + 0.3 + 0.004 =$

    A. 5.34   B. 50.34   C. 5.034   D. 5.304

---

2. **Complete each of the following :**

  1. 73 Hundredths + 5 Thousandths = _____ Thousandths.

  2. The number whose all prime factors are 2 , 3 and 3 is _____

  3. $2,000 \text{ g} =$ _____ kg

  4. The number _____ is a common multiple of all numbers.

  5. The product of $13.5 \times 2 =$ _____

  6. The sum of $3.127 + 8.65 =$ _____

  7. The quotient of $11.11 \div 11 =$ _____

  8. The number $3 + 0.2 + 0.05 + \dfrac{9}{1,000} =$ _____ (in the standard form).

---

3. **Choose the correct answer :**

  1. 1.23 _____ 1.27

    A. <   B. >   C. =   D. otherwise

  2. Five tens and forty-seven hundredths = _____

    A. 5.47   B. 5.047   C. 50.47   D. 50.047

  3. All the following are multiples of 5 except _____

    A. 5   B. 1   C. 10   D. 15

  4. The value of the variable x in the equation $9.5 - x = 4.3$ is _____

    A. 13.8   B. 2.5   C. 5.8   D. 5.2

  5. The composite number in the following numbers is _____

    A. 7   B. 17   C. 15   D. 5

  6. ✱ $7,000 \text{ mL} =$ _____ L

    A. 7   B. 70   C. 700   D. 0.7

  7. In $30 \div 7 = 4 \text{ R } 2$, the divisor is _____

    A. 30   B. 7   C. 4   D. 2

---

4. **Answer the following questions :**

  1. Use the mathematical order of operations to evaluate : $12 + (9 - 2) \times 5$

---

2. Find L.C.M of the two numbers 20 and 30

3. Decompose the number 80.507 using the expanded form.

4. A teacher wants to distribute 280 prizes to 7 classes equally.
How many prizes per each class ?

| 20 | Aswan Governorate |

The Educational Directorate
Maths Inspection

1. Choose the correct answer from those given :

1. 98.013 ⎯⎯ 98.101
   A. = B. > C. ≤ D. <

2. $(80 \times 10) + (80 \times 4) + (3 \times 10) + (3 \times 4) = $ ⎯⎯
   A. 83 × 14 B. 38 × 14 C. 83 × 41 D. 38 × 41

3. The rule of pattern of: 3 ,6 ,9 ,… is ⎯⎯
   A. $(n \times 3) - 1$ B. $n + 3$ C. $n + 2$ D. $(n \times 3) + 1$

4. The greatest common factor G.C.F of the two numbers 28 and 42 is ⎯⎯
   A. 28 B. 42 C. 14 D. 41

5. The value of the digit 8 in the decimal number 734.28 is ⎯⎯
   A. 0.08 B. 0.8 C. 8 D. 0.008

6. The value of (x) in the equation 2.342 − x = 1.924 is ⎯⎯
   A. 0.814 B. 0.481 C. 0.841 D. 0.418

7. 3.3 m ⎯⎯ cm
   A. 3,300 B. 330 C. 33,000 D. 33

2. Complete :

1. The evaluation of expression : 88 ÷ 11 − 7 + 4 is ⎯⎯
2. The quotient of : 1.5 ÷ 0.04 by using the standard algorithm is ⎯⎯
3. The value of (F) in equation : 10.94 − F = 9.04 is ⎯⎯
4. The evaluation of expression : 2 × 18 ÷ 9 + 9 is ⎯⎯
5. The product of : 0.3 × 0.4 is equal to ⎯⎯

90

6. The product of : 6,209 × 33 is equal to —————

7. 56.5 × 2.3 − 15 + 12.7 = —————

8. The quotient of : 62.24 ÷ 16 is equal to —————

3. Choose the correct answer from those given :

1. 56.284 ≈ ————— (to the nearest Hundredths).

   A. 56.29   B. 56.28   C. 65.82   D. 65.28

2. 10 + 2 + 0.4 + 0.02 =

   A. 21.24   B. 21.42   C. 12.24   D. 12.42

3. 5 Hundredths − 24 Thousandths = ————— Thousandth(s).

   A. 26   B. 82   C. 24   D. 42

4. 12 + (24 ÷ 4) + 8 = —————

   A. 62   B. 26   C. 28   D. 82

5. 1,376 ÷ 43 = —————

   A. 43   B. 23   C. 32   D. 320

6. 5.8 × 7.4 = —————

   A. 42.29   B. 24.29   C. 42.92   D. 24.92

7. The following number in the pattern : 0 ,1 ,1 ,2 ,3 ,5 ,8 ,13 ,... is —————

   A. 21   B. 12   C. 20   D. 22

4. Answer the following questions :

1. A rope that s 8.7 meters long is cutting into 3 equal pieces. How long is each piece ?

2. The frame of the building will be made of 25.3 tons of concrete and 52.8 tons of steel. What is the total mass of the frame of the building ?

3. A box of mangoes weights 9 kilograms. How many kilograms would 1,000 boxes weight ?

4. Find the least common multiple L.C.M for the following pair numbers : 5 and 10

91

Exams 2023

Model 1

1. Choose the correct answer.

a. $1.5 - 0.75 =$

    A. 1.8   B. 7.5   C. 0.75   D. 1.25

b. The number 11 has _____ factors.

    A. 1   B. 2   C. 3   D. 4

c. _____ $\times 9 = 9,000$

    A. 10   B. 100   C. 1,000   D. 10,000

d. $3.5 \, L - 1500 \, mL =$ _____ L.

    A. 2   B. 5   C. 2,000   D. 5,000

2. Complete.

a. $1,227 \div 12 = 102 \, R$ _____

b. In the pattern : $3, 5, 7, 9, 11, \ldots$ the rule is _____

c. The value of 3 in the number 5.137 is _____

3. Put (✓) to the correct statement and (✗) to the incorrect statement.

a. $45.23 \times 10 = 4.523$ (   )

b. $13 + 7 \times 0.1 = [13 + 7] \times 0.1$ (   )

c. 2 hundredths $-$ 18 thousandths $=$ 2 thousandths.   (   )

4. Match.

a. $123 \div 10$		**1.** 123
b. 12.3×10		**2.** 12.3
c. $0.1 + 0.02 + 0.003$		**3.** 1.23
d. $5.5 - 4.27$		**4.** 123 thousandths

5. a. By using the Area model calculate the product of 75 × 23

b. If Mona has 1.275 kg. of flour. She wants to make a cake for her children If the cake needs 2 kg. of flour. **How many more flour does Mona need ?**

Model 2

1. **Complete.**

   a. If $4.71 + K = 9.2$, then K =

   b. $0 \div 23 =$

   c. The factors of 12 are

   d. $0.3 \times 0.2 =$

2. **Choose the correct answer.**

   a. The number [fifteen and fifteen hundredths] in expanded form is

   A. $10 + 5 + 0.1 + 0.005$ B. $10 + 5 + 0.05 + 0.001$

   C. $10 + 5 + 0.1 + 0.05$ D. $10 + 5 + 0.01 + 0.005$

   b. $700 g =$ ____ kg.

   A. 0.7 B. 7 C. 0.07 D. 0.007

   c. If $12 \times 302 = 3,624$ then $3,625 \div 12 =$

   A. 302 B. 302 R1 C. 302 R2 D. 302 R3

3. Put (✓) to the correct statement and (✗) to the incorrect statement.

   a. $13 \times 15 = 195$ ( )

   b. $999.9 \quad 99.99 - 900.09$ ( )

   c. $2.345 \times 0.01 = 234.5$ ( )

4. Match.

a. $3.7 + 1.54$

b. $9.1 - 3.8$

c. 0.2×25.3

1. 5.06

2. 5.24

3. 5.3

5. a. Find GCF and LCM for the two numbers 9 and 12

b. If the perimeter of this shape is 13.5 meters what does x equal ?

3.4 m

3.15 m

X

4.7 m
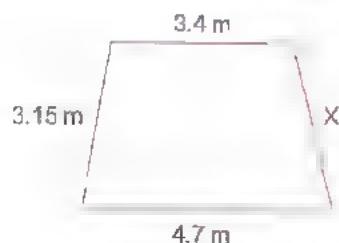
Model J

1. Put (✓) to the correct statement and (X) to the incorrect statement.

a. $4.16 \times 2.3 > 41.6 \times 2.3$ (   )

b. The value of the expression $5 \times 5 + 5 = 5 \times (5 + 5)$ (   )

c. $\frac{3}{1000} + \frac{3}{100} + \frac{3}{10} = 0.333$ (   )

2. Complete.

a. The common factor for all the numbers is

b. $9 \times 27 = (9 \times \underline{\hspace{2cm}}) + (9 \times 7)$

c. $7,368 \div \underline{\hspace{2cm}} = 73.68$

3. Choose the correct answer.

a. By using the information what is the first four numbers pattern ?

Starting number : 2   Rule : $(n + 1) \times 2$

A. 2 , 4 , 6 , 8   B. 2 , 6 , 14 , 30   C. 2 , 6 , 12 , 24   D. 2 , 4 , 6 , 8

b. $8.43 \times 0.2 \approx$ _____ (to the nearest hundredths).

    A. 1.686   B. 1.7   C. 1.69   D. 2

c. $1{,}515 \div 15 =$ _____

    A. 15   B. 11   C. 101   D. 1001

d. The LCM of 6 and 10 is _____

    A. 60   B. 30   C. 15   D. 45

4. **Match.**

By using the fact $112 \times 35 = 3920$

a.	11.2×3.5	1. 3.920
b.	$1{,}12 \times 3.5$	2. 39.2
c.	$3920 \div 35$	3. 112

5. a. Use the area model to solve $2{,}576 \div 23$

b. If 18 plums are packed each 3 to a bag. then , how many bags w ll be there ?

Model 4

1. **Choose the correct answer.**

a. There are _____ milliliters in 18 liters.

    A. 18   B. 180   C. 1,800   D. 18,000

b. 2 thousandths $\times 4 =$

    A. 8   B. 0.8   C. 0.08   D. 0.008

c. Which expression matches the clue «Add 30 to 25 and divide the result by 0 5» ?

    A. $30 + 25 \div 0.5$ B. $0.5 \times (30 + 25)$ C. $(30 + 25) \div 0.5$ D. $30 \div 0.5 + 25$

d. Which is Not a common multiple of 9 and 6 ?

    A. 42   B. 54   C. 36   D. 18

2. Complete.

 a. 7 hundredths − 17 thousandths =   thousandths.

 b. From the opposite bar model

30.8	
a	19.5

the value of a =

 c. $5.7 \div 100 =$

3. Put (✓) to the correct statement and (✗) to the incorrect statement.

 a. 3 is a factor of 13   (   )

 b. $73.526 \div 0.01 = 7352.6$ (   )

 c. The place value of 4 in the number 3.146 is hundredths.   (   )

4. Match.

 a. | Prime factors of 15 | 1. | 1, 3, 5 and 15 |

 b. | Factors of 15 | 2. | 3, 5 and 7 |

 c. Prime numbers between 2 and 11   3. 0, 3, 6, 9, 12, 15

 d. | Multiples of 3 up to 15 | 4. | 3 and 5 |

5. a. Hala has a restaurant, she sold 301 Kebabs in March, she sold 532 kebabs in April. If she makes each kebab with 51 grams of meat.
   How many grams of meat did she use in March and April ?

 b. Use the partial quotients strategy to solve the problem 576 ÷ 18

45

1. **Complete.**

   a. _____ $+ 3.9 = 6.5$

   b. _____ is the only even prime number.

   c. $1,000 \times$ _____ $= 60,000$

2. **Choose the correct answer.**

   a. The divisor in the equation $36 \div 4 = 9$ is

   　　A. 36　　　　　B. 4　　　　　C. 9　　　　　D. zero

   b. $2.51 \times$ _____ $= 0.0251$

   　　A. 100　　　　B. 0.001　　　C. 0.01　　　D. 0.1

   c. Which is the first step in evaluating $28.1 - 3.5 \times 0.2 + 29 - 4$?

   　　A. $28.1 - 3.5$　　B. 3.5×0.2　　C. $0.2 + 29$　　D. $29 - 4$

   d. $2 + 0.05 \bigcirc 1.7 + 0.7$

   　　A. $<$　　　　　B. $=$　　　　　C. $>$

3. **Put (✓) to the correct statement and (✗) to the incorrect statement.**

   a. 3 is a composite number.　　　　　　　　　　　　　　　　(　)

   b. $4.7 + 3.6 = M$ Represent an expression.　　　　　　　(　)

   c. The Rule in the pattern $10, 20, 30, 40,$ _____ is $n + 10$　(　)

4. **Match.**

   a. $(50 \times 30) + (50 \times 7)$ $+ (5 \times 30) + (5 \times 7)$

   b.
	700	4
60	42,000	240
5	3,500	20

   c. 750×13

   d. 135×10

   1. 704×65

   2. 55×37

   3. $1,350$

   4. $9,750$

5. a. Find the result :

   1. 4,865 ÷ 32

   2. 321 × 15

   b. In one year, a school used 15,730 red papers, 4,510 Fewer blue papers than red papers How many papers were used in all ?

Model 6

1. Match.

   a. | 7.351 ÷ 0.01 | 1. | 7351 |

   b. | 735.1 × 0.1 | 2. | 7.351 |

   c. | 73.51 × 100 | 3. | 73.51 |

   d. | 735.1 ÷ 100 | 4. | 735.1 |

2. Choose the correct answer.

   a. The GCF of 10 and 15 is
      A. 10   B. 15   C. 5   D. 30

   b. A group of 48 people want to travel by bus. each bus ticket costs 175 L.E. How much do they need to pay in all ?
      A. 6,200   B. 5,650   C. 840   D. 8,400

   c. 3,003 ÷ 33 = _____
      A. 19   B. 91   C. 109   D. 901

   d. 0.735 L = _____ mL.
      A. 735   B. 7.35   C. 73.5   D. 7350

3. Put (✓) to the correct statement and (✗) to the incorrect statement.

   a. 35.469 ≈ 35.47 (to the nearest hundredths).   (   )

   b. 23 × 14 – 312   (   )

   c. If 25 × 34 = 850. then 2.5 × 3.4 = 8.5   (   )

47

4. Complete.

   a. $1,477 \div 12 = 123\,R$ ____

   b. $0.28 \div 0.04 =$ ____ $\div 4$

   c. $7.7 , 6.6 , 5.5 , 4.4 ,$ ____ , ____   [in the same pattern]

5. a. Find the result.

    1. $5.3 - 1.624$ 2. $21.57 + 361.983$

   b. Find LCM of 18 and 24

Model   7

1. Complete.

   a. The place value of the digit 5 in the number 3.514 is

   b. $0.007 + 0.7 + 70 =$ ____   c. If $k - 3.4 = 2.17$, then $k =$ ____

2. Put ($\checkmark$) to the correct statement and (X) to the incorrect statement.

   a. 1 is a prime number.   (   )   b. $314.52 \times 0.01 = 31,452$ (   )

   c. $2,323 \div 23 = 11$ (   )

3. Choose the correct answer.

   a. $4.1 \times 1.1 =$

     A. 45.1   B. 451   C. 0.451   D. 4.51

   b. If $26 \times 352 = 9,152$. Then, $9,155 \div 26 =$

     A. 352   B. 352 R1   C. 352 R2   D. 352 R3

   c. What is the ones digit of the product of 456×24 will be without solving the whole problem ?

     A. 3   B. 4   C. 5   D. 6

   d. 1 and 7 are the common factors of

     A. 2 and 7   B. 2 and 14   C. 7 and 12   D. 7 and 14

4. Match.

a. | 1237 tenths |

b. | 1273 hundredths |

c. | 1273 thousandths |

1. | 1.273 |

2. | 12.73 |

3. | 127.3 |

5. a. Ola saved 17.25 pounds and her brother Hosam saved 8.5 pounds.
   Find the sum they saved.

   _____

   _____

   b. Write the expression that matches the clue. Then, evaluate the expression.
   Subtract 3.1 from 4.6, then multiply the result by 0.01

   _____

   _____

   _____

Model 8

1. Put (✓) to the correct statement and (✗) to the incorrect statement.

   a. The LCM of 6 and 15 is 60 ( )

   b. $56 \times 43 = (50 \times 40) + (50 \times 3) + (6 \times 40) + (6 \times 3)$ ( )

   c. If $4 \times 6 = 24$, then $4 \times 600 = 2,400$ ( )

2. Choose the correct answer.

   a. $462.3 \div 0.23$ ☐ $4623 \div 2.3$

   A. > B. < C. =

   b. Which expression matches the clue "Giovanni bought 60 fish. He put 5 fish in 9 bowles each"
   How many fish are left with Giovanni ? _____

   A. $[60 - 5] \times 9$ B. $[60 - 9] \times 5$ C. $60 + 5 \times 9$ D. $60 - 5 \times 9$

   c. 5,000 not equals _____

   A. $5 \times 1,000$ B. 50×100 C. 500×10 D. 500×100

   d. 4 is a factor of _____

   A. 40 B. 39 C. 38 D. 37

3. **Complete.**

   a. The value of 7 in the number 5.167 is —————

   b. 4 thousandths + 3 thousandths = ————— thousandths.

   c. 91.364 ≈ ————— (to the nearest hundredths)

4. **Match.**

   a. $7.3 + 2.01$

   b. $6.4 - 3.2$

   c. 2.1×0.3

   d. $4.5 \div 0.5$

   1. Thirty-two tenths

   2. $\dfrac{63}{100}$

   3. 9

   4. 9.31

5. a. Solve the following equations :

   1. $T - 2.45 = 0.26$

   2. $k + 2.40 = 3.04$

   b. Use the order of operation to evaluet $5.5 \div 5 \times 10 - 10$

Model 9

1. **Choose the correct answer.**

   a. The GCF of 20 and 30 is —————

   A. 1   B. 4   C. 5   D. 10

   b. There are 3,000 grams in ————— kilograms.

   A. 3   B. 30   C. 300   D. 3,000

   c. $320 \times 15 =$ —————

   A. 48   B. 48 tens.   C. 48 hundreds.   D. 48 thousands.

   d. $4150 \div 29 = 143\ R$ —————

   A. 4   B. 2   C. 1   D. 3

2. Complete.

    a. $89.36 \div 100 = 89.36 \times$ _____

    b. $32, 16, 8, 4,$ _____ , _____ (in the same pattern)

    c. $3 + 3$ tenths $+ 3$ hundredths $=$ _____

---

3. Put (✓) to the correct statement and (✗) to the incorrect statement.

    a. $1.1 \times 4.5 > 0.459$ (   )   b. All the factors of 12 are $1, 2, 3, 4$ and 6 (   )

    c. $7.41 + 3.2 - 1.5$ represent an expression.   (   )

---

4. Match.

    a. | The next term in the pattern $3, 5, 7, 9,$ _____   1. | 6

    b. | $55 \div [2 + 9] - 5$ 2. | 11

    c. | The third term in the pattern which Rule $[n-1] \times 3$ starting with 2   3. | zero

---

5. Find.

    a. $32.75 + 16.5$

    b. $11.1 - 5.7$

    c. 32×12

    d. $2,743 \div 13$

Model   10

1. Choose the correct answer.

    a. $42.18 \times 10 =$ _____

        A. 4.218   B. 421.8   C. 42.18   D. 4218

    b. $3.2 + 4.05 \square 7.05 + \dfrac{1}{2}$

        A. $>$ B. $=$ C. $<$

c. The number 7 has ———— factors

    A. 1   B. 2   C. 3   D. 4

d. ———— $\times 5 = 5{,}000$

    A. 1,000   B. 100   C. 10,000   D. 100,000

---

2. Complete.

    a. $130 \times 30 =$ ————

    b. $36.479 \approx 36.50$ (to the nearest ————)

    c. ———— $\times 0.01 = 5.324$

---

3. Put (✓) to the correct statement and (✗) to the incorrect statement.

    a. 18 Liter = 1800 mL.   (   )   b. $2.56 + x = 3.8$ is an equation.   (   )

    c. $15 + 5 \times 4 = (15 + 5) \times 4$ (   )

---

4. Match.

    a. | $32.4 + 0.01$ 1. | 0.324

    b. | 32.4×0.01 2. | 32.39

    c. | $32.4 \div 0.01$ 3. | 32.41

    d. | $32.4 - 0.01$ 4. | 3240

---

5. a. Find GCF and LCM of 20 and 30

    b. A jewellery maker has 0.85 kg of gold used to make special type of identical rings. The mass of one ring is 4 g and the maker has 226 g of remaining gold. **Calculate the number of rings can be produced ?**